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ABSTRACT

The educational boom of the past two decades, prospects for the next 10 years, and the complex of policy issues facing member countries of the OECD are surveyed in this report. Topics discussed include record enrollments, educational efficiency, dropouts and the school-leaving age, new secondary school structures, implications for higher education in the growth of secondary schooling, financial resources, and problems of policy implementation. Tables, charts, and graphs illustrate study findings. (Author/LLR)

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DEVELOPMENT OF SECONDARY EDUCATION

TRENDS AND IMPLICATIONS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PARIS 1969

1/2/3

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the OECD shall promote policies designed:

- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

The legal personality possessed by the Organisation for European Economic Co-operation continues in the OECD which came into being on 30th September 1961.

The members of OECD are Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

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PREFACE

It is one of the main tasks of international organisations such as OECD to assist Member countries in adapting their policies and institutions to the changes which modern societies are undergoing. In the field of science and education these changes have been both rapid and profound and the need for renewal of outdated structures and institutions has, therefore, been particularly urgent.

This report indicates the directions in which secondary education in the OECD countries has been developing in response to the challenge of mass enrolment and the needs of a rapidly changing society. Secondary education has had to undergo drastic changes in structures, in curricula and in methods and techniques of teaching, a process which has met with many obstacles. Among them were limited financial and personnel resources, but in many Member countries also lack of clarity and of consensus about the objectives to be attained.

The needs of the new population groups which are now pouring into the schools differ from those of the traditional elite. It is in the first place to the needs of these groups, whose abilities and motivations tend to be lower than, or at least different from, those of the population of the former selective secondary schools that secondary education programmes must de geared if the generally endorsed objective of equal educational opportunities is to be made into an educational reality. To reconcile this objective, and its pedagogical implications, to the needs of the labour market for middle-level qualified manpower and the demands and the absorption capacity of higher education is the major policy problem with which the OECD countries are now faced.

The report identifies the conflicts between objectives, alternative policies and resources, which have appeared in many countries. It does not provide any clear-cut solutions to these problems but it does identify the major elements which, through further study and confrontation between different national experiences, can contribute to the formulation of future policies for secondary education.

The need for a comprehensive approach to secondary education policies in the Member countries arose from the Organisation's work in educational investment planning and development, and was further underlined by the invitation to undertake a study on this subject which was addressed to the OECD by the Fifth Conference of European Ministers of Education, in 1965.

The report, which is published under the responsibility of the Secretary-General, has been prepared under the Programme of the Committee for Scientific and Technical Personnel and in collaboration with the national authorities in Member countries. Within the Secretariat, responsibility for this work has been with Alan Little and Denis Kallen, in their capacity as Consultants to the Directorate for Scientific Affairs.

Thorkil KRISTENSEN,
Secretary-General of the OECD.

INTRODUCTION

The development of secondary education has been the subject of study by the OECD Committee for Scientific and Technical Personnel. The Committee's investigations into the main policy problem confronting education in OECD Member countries during a period of very rapid educational expansion suggested the desirability of a general review of recent trends and long-term development targets in secondary education. The decision was reinforced by the invitation to the Organisation from the Fifth Conference of European Ministers of Education, held in Vienna in 1965, to undertake a general review of secondary education.

The Committee's reports on its *Mediterranean Regional Project*[1] had already emphasized the role of secondary education in a country's educational policy and development programme. Each country's system of secondary education was examined and a critical appraisal made of enrolments and graduates related to the demand for qualified manpower by the economy. A more rational approach was thus made possible by relating educational supply to labour market demand even though no detailed suggestions were made as to how the system might be modified to comply with its wider socio-political role.

The work of the Committee's *Educational Investment and Planning Programme* has included study of the development of secondary education in some of the economically more advanced Member countries.[2] Whereas, in the Mediterranean countries, the problem was generally to strengthen secondary education to meet the needs of a rapidly growing economy and to stimulate economic growth, in the more advanced countries secondary education was already catering for a much larger proportion of the age-group and was far more closely geared to economic needs. These countries face the problem of adapting their secondary education systems to meet mass participation and the demand for full and equal educational opportunities, rather than the strictly labour market needs stressed in MRP reports. But also in the industrialised countries the interaction between what is taught in the secondary schools and what knowledge and skills are required by the economy needs urgently to be re-considered. The occupational skills that are needed change rapidly, and so does the employment situation. Secondary education systems have to respond to this challenge by continuously adjusting their programmes and approaches and thus providing pupils with an adequate preparation for a society which evolves very rapidly.

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[1] See MRP Reports on Greece, Italy, Yugoslavia, Portugal, Spain and Turkey, OECD.

[2] See Country Educational Policy and Planning Reports (EIP) for Austria, Ireland the Netherlands, and Sweden, OECD.

The evolution of the Committee's work reflects the trend away from primarily economic preoccupations to the more general social aspect of adapting secondary education to increased participation and reconciling this shift with the needs of a complex society. It is this mass participation which makes necessary the formulation of new objectives, new course content and new criteria for pupil evaluation. Increased demand does not mean simply providing more places, but calls for a reconsideration of the concept of secondary education.

The differences in the socio-economic development and in the education systems of OECD countries provide a wide range of experience and problems as a basis for a comparative analysis of educational policy and development. Industrialised European countries are now experiencing similar problems of mass participation in secondary education to those already faced by North America and Japan. In time these systems have developed new types of policy concern, partly through the realisation that widened participation does not necessarily mean universal participation or equality of access to the next stage of education. Finally, the quality of educational experience within a mass system becomes a crucial concern. Secondary education policy is therefore having to be re-oriented, new approaches found and new educational resources mobilized, as expressed for example, by the recent move in the USA and Japan towards greater differentiation in upper secondary schooling. Many European countries may soon find themselves re-considering these types of questions which may be characteristic of the later stages of the movement towards universal participation.

The report which follows hereafter brings out the main trends in secondary education development and examines the long-term policy problems resulting from the present increase in secondary enrolment, particularly as this affects structure, content and teaching methods. No attempt has been made to give a complete qualitative and quantitative picture of secondary development, but data for individual countries have been used to illustrate a general argument. Similarly, for comparisons of particular aspects of secondary development, those countries have been selected where development has resulted from similar policy approaches.

I. INCREASED PARTICIPATION

From 1950 to 1965 secondary education enrolments in the OECD area increased from 25½ million to over 49 million. This represents an increase of well over 90 per cent. In the European and North American Member countries enrolments more than doubled, in Japan they rose by over 50 per cent.

Over the period 1950 to 1955 increases in Europe and North America were of roughly the same size. From 1955 to 1965 the enrolment growth in Europe was much larger than in the US and Canada.

Over the same period primary enrolments increased much slower: from 1955 to 1965 by 7 million pupils or by only 10 per cent. But the number of students in higher education was in 1965 twice as high as in 1955. In nearly all OECD Member countries the percentual enrolment increases in higher education were much higher than those in secondary. Notable exceptions were, however, France, Canada and five of the six Mediterranean countries.

Demographic factors greatly influenced secondary enrolments in the 1955-65 period. It was during this period that youngsters born during the post-war " baby boom " reached adolescence and the two countries where birth rates were then very low—Germany and Austria—have a much smaller increase in secondary enrolment. *Greater participation,* however, has done much to swell enrolment, and was the most important factor in many countries. Except for parts of the Mediterranean Area, full enrolment up to age 14 has now been achieved in the OECD area. Enrolment of the 15-19 year olds in full-time upper secondary education varies: Canada, Japan and the USA have over 80 per cent; Belgium, Denmark, France, the Netherlands, Norway and Sweden, 60-80 per cent; Austria, Yugoslavia, 40-60 per cent, the other countries, less than 40 per cent.

Projections for the 15-19 age-group show that by 1975 only in Greece, Portugal, Spain and Turkey will enrolment be less than 50 per cent and that in many countries it will be over 70 per cent. In those Mediterranean countries where the under 14's are not yet fully enrolled, lower secondary education will show the greatest increase, but in the more developed countries the increase will be strongest in upper secondary enrolments.

Although with the general increases in enrolments the enrolment ratio disparities of various social, regional and ethnic groups have in some cases narrowed, the more subtle disparities (in the type of secondary school or curriculum, in the transfer rates to upper secondary or to higher education or in the field of study chosen), seem to be very persistent. This shows how deeply rooted the causes of these disparities are in social, economic and educational structures, and how radical must be any policy which will effectively democratise secondary education.

The absolute number of drop-outs, failures and pupils repeating grades has, in general, increased in step with the rise in enrolments. In consequence, the greater number of these " failures " will inevitably give rise to serious educational and social problems. In several countries, however, the retention rate (the percentage of first enrolments who complete the course) has improved, but this has been, in some of them, at the expense of efficiency in that it has been accompanied by an increased repeater rate.

Data on early leavers is available for only a few countries and here it shows that many of them do, in fact, transfer to parallel schools. The rate is particularly high in lower secondary schools, which thus become a form of orientation for later levels and types of secondary schooling. The transfers, however, are mainly downward, from the more selective and university preparatory to the less selective " short " general secondary, or to technical-vocational courses. These transfers may therefore be due to failure at school, and are not the result of re-orientation towards studies more suited to pupils' interests and aspirations.

In those countries where it is the practice to repeat classes, the age level of many of the pupils is much higher than it should normally be. By the middle school, pupils are already one or two years behind, and only very few get the terminal certificate at the minimal age. This practice of " repeating " has very serious consequences, particularly for those who leave at the end of the compulsory period without having reached the terminal class of either the upper primary or lower secondary school.

The high repeater and drop-out rates as they can be found in the secondary schools of most OECD Member countries, raise the question as to the social and personal implications for the pupils concerned. They must also be considered in their implications as to the immense resources which they require in terms of finance, school places and, most of all, teachers. The resource constraints which have resulted from the expansion in numbers are seriously aggravated by these phenomena.

II. STRUCTURAL AND QUALITATIVE IMPLICATIONS

Secondary education structure and content have been going through a steady process of change during this period of increased participation, although there is no simple cause-effect relationship between them. Economic, social, political and educational variables interact, so that the process is complex. Unless the structure, the content and the criteria of evaluating the present secondary systems are suitably adapted, mass participation and equal educational opportunities cannot be attained.

OECD countries have developed two broad types of new structure in *lower secondary education:*

- the use of common basic curricula in different types of schools, with transfer facilities extending over several years between them;
- comprehensive schools which cater for all children, whatever their ability. This may take the form of a common curriculum for all, or of a partly common and a partly differentiated curriculum, or a differentiated curriculum within the same school.

Variations to these systems have been introduced to suit the particular conditions and objectives of individual schools or educational levels. It is too early to assess the merits of these two structural types, but the extent to which mass participation and equality af opportunity have been achieved in each will have to be studied, for example, in the parallel system in force in Germany, Austria and the Netherlands; in the comprehensive type of junior secondary curricula in Sweden, Norway, Italy, Yugoslavia and France; in the fully comprehensive high schools in Canada, Japan and the United States, and in those now rapidly developing in the United Kingdom.

In a few countries wider transfer possibilities at *upper secondary level* have been created, thus paving the way for a more comprehensive structure. At the same time, the belief is spreading that also at this level strictly segregated types of schooling are not compatible with increased participation and improved educational opportunity. The background conditions in which these objectives have to be attained, however, are very different from those in lower secondary education: in Europe, very few Member countries have achieved mass participation in upper secondary education. In addition, any changes at this level are limited by demand on the part of the principle consumer of secondary school graduates, namely, higher education.

The ineffectiveness of assessment and orientation in lower secondary schools has tended to slow down the reorganisation of upper secondary education. Transfer to upper secondary programmes is still as much dependent on parental choice and traditionally measured school performance as on rational assessment or guidance. The traditional link between upper secondary and higher education and, more particularly, the strong appeal of certain types of upper secondary school, can become obstacles to change. This situation will continue unless guidance/assessment is made effective and the prestige appeal of academic-type upper secondary school modified. Since educational systems must respond to both economic needs and social demands, conflicts between the type and number of places provided in upper secondary school (in line with the country's needs and possibilities) and the aspirations of parents and pupils are always possible. In recent reforms in some OECD countries this kind of problem has been explicitly raised and policy measures have been taken to reduce the gap between demand and places availables.

The trend towards a more comprehensive structure of upper secondary education has made it necessary to devise suitable curricula for the less able pupils who formerly left elementary school to do unskilled jobs. Vocational training was partially provided in the old upper elementary schools, and there is a problem in replacing this in new secondary schools. It is at this level that the conflict between the needs for a longer general education for all and the immediate requirements of the labour market for specific industrial skills can be most directly observed. When vocational training is incorporated into general education, the question of where it should take place (in school or in industry) and what it should contain (a correct balance of the vocational, general, practical and theoretical) may arise. Increased participation and longer compulsory schooling will make these questions increasingly important over the next decade.

In most developed Member countries, traditional secondary education policy centred upon the idea of providing the most suitable curricula for the gifted child. If the less gifted are to be encouraged—or compelled—to complete the full secondary course, then suitable curricula will have to be designed for them. Educational policy and practice must ensure that the secondary school system will prepare the new type of pupil for entry into society and into the labour market; allow him subsequently to re-enter the educational system, and be compatible with the general objectives of common and flexible secondary education.

Suitable adult education should also be provided for the less gifted, to complement their minimum period of schooling. The concept of permanent education is still poorly developed although, as a method of vocational training and re-training and as preparation for a return to full-time formal education, it is exceedingly important.

III. INTERACTION BETWEEN SECONDARY AND HIGHER EDUCATION

Changes in any types or levels or education, whatever the educational system, mutually affect each other, and the recent changes in secondary education have had important implications for higher education. With the development of educational planning and the need to make the most efficient use of educational resources, educational administrators have become increasingly aware of this. The increase in the number of secondary pupils, for example, has intensified the pressure for places in higher education.

The reason for this increase in secondary enrolments was not the same in all countries. In some (Norway, Sweden, France and Yugoslavia) it is the restructuring of secondary education which has caused the number of certificated leavers to increase. In others (Germany, Netherlands) it is the increase in the proportion of the age-group entering secondary schools, particularly in the university preparatory stream, but with no major modification of the rate of attrition. A third group (Austria, Denmark, England and Wales) has greatly reduced drop-outs and leavers during the system and so increased the number of qualified leavers.

Since even now only a relatively small proportion of the age-group complete academic secondary schools, there is considerable potential for further expansion, and a corresponding probability of increased demand for places in higher education. Demand might increase in such countries as England and Wales, and the Netherlands, if some of the eligible young people who now decide not to go on to higher education were to change their minds. At the same time, the types of secondary schools which give access to higher education, and the transfer rates to higher education from the different types of secondary schools, might also undergo change. In most countries, certificate holders from technological and commercial secondary schools have limited access to higher education and a small proportion do, in fact, go on to university level studies. Changes in advanced education admission requirements, or in the proportion of those going on to higher education, might considerably and rapidly increase the demand for places.

This means that higher education must be prepared to meet continuously increasing pressure due to the increase in the number of qualified and motivated secondary school graduates. An increase in the number of places in higher education would, of course, go far to meet this pressure, but the question is not so simple as this. Admission requirements, particularly in countries with systems similar to that of France, where all certificated secondary school leavers are eligible for admission to the university, are being carefully reconsidered to see whether additional requirements should be imposed. This may apply to all faculties or, as in Sweden and the Netherlands, to only certain faculties (e.g. medicine and science). The whole question of whether the secondary leaving certificate should give right of admission to the university has thus become much more urgent due to this numerical pressure, as has the definition of the precise conditions of admission to be imposed. In England and Wales the situation is reversed. There, the school-leaving certificate is a minimum requirement, but does not, in itself, give right of admission. The Robbins Committee recommended granting right of admission to all qualified secondary graduates in order to stimulate admission and to facilitate planning.

Expansion has raised other problems than that of the admission requirements. The changes in secondary education mean that secondary graduates now come from schools with different methods, structure and curricula from those previously supplying candidates to the university and the nature of higher education is inevitably brought under discussion. In France, the Netherlands and Sweden discussion is now taking place on the advisability of a more differentiated structure in the 1970's and 1980's. The present situation, in which the university is the stronghold of higher education, is being examined in view of the need for other types of institutions, providing shorter, more occupationally oriented courses. Again, in England and Wales, the opposite situation prevails, and the problem there is how to ensure parity of status among very different types of institutes of education.

Not all the pressure for change in higher education is due to changes at secondary level, for, demands are also made from within higher education itself. Higher education must respond to the same type of social, economic and political forces as are re-shaping secondary education. These forms of pressure are making themselves felt at the same time, and are often consistent in the type of change they imply. For example, the demand for shorter courses than those the university currently offered, arises as a result of the pressure of increased student numbers, high drop-out in the university, the need to cut the cost of higher education, and the economy's requirements of different types of trained manpower of above secondary educational level, but below final university examination level.

The Question of Resources

The amount of additional resources required as a result of past and projected changes in secondary education is exceedingly high, although it is difficult to separate the increase for secondary from that for the other levels. Educational expenditure has increased in both money and real terms in all Member countries. As a proportion of GNP it has risen in developed and developing countries—e.g. from 1955 to 1965, from 3½ per cent to 5½ per cent of GNP in the Netherlands (in 1969 it will be nearly 8 per cent of GNP) and from 2.6 per cent to 4.8 per cent in Yugoslavia. Projected expenditure shows that twice as much will be spent on education in the seventies as in the sixties in the Netherlands, Spain, Yugoslavia and Ireland, and three times as much in Greece, Turkey and Portugal. In the developing countries, the more expensive types of education—secondary and technical—will increase most rapidly, but the projected qualitative improvements to be made to primary schooling will also add considerably to educational expenditure. In most Mediterranean countries these qualitative improvements in primary education will probably represent the most important source of increase. In the more developed countries the tendency is for the general academic secondary schools to grow fastest, and these may not be the most expensive. Even so, expenditure will certainly increase and increase heavily.

In the short run, the building and staffing of sufficient schools will be as difficult a problem to overcome as that of restricted financial resources. The need for more teachers and places exists in all countries, and is perhaps greatest in the Mediterranean region where teacher stocks for the period 1961 to 1975 must be increased by amounts varying from 45 per cent in Greece to 240 per cent in Turkey. Anticipated increases are generally lower in other Member countries but the United States, Germany and Norway each expect to increase the teacher stock by 50 per cent. In addition to the training of new teachers, retraining must also be provided for many of those already in service. Changes in curricula, teaching methods, educational principles and objectives have made teachers of some subjects redundant, or their knowledge out of date. The stock of buildings is also clearly insufficient—in England and Wales, for example, as many places as already existed in 1960 must be provided by the mid-seventies if accepted reforms are to be applied. National authorities will therefore find that their building and training capacity imposes a limit on their possibilities of expansion. New ideas, principles and methods must be found for both training and building, and the active co-operation of the teaching force obtained, if resource restraints are to be overcome.

These facts clearly illustrate one of the most difficult problems which educational policy-makers are facing: educational plans and aspirations have surpassed the nations' capacity to pay for them, or the ability to provide the necessary personal and physical facilities. Alternatives to existing methods and facilities are therefore receiving increasing attention, including the fuller use of facilities, and part-time instead of full-time enrolment. Educational technology, in the form of closed circuit television, language laboratories, computer-assisted instruction, etc., may be one way of improving the quality of the learning experience and perhaps also of economising teaching staff and other scarce resources. Educational research and development in these fields can help planners and administrators and improve educational standards. It is also of the utmost importance that the time required for new ideas and techniques to become common practice be reduced, and that the dissemination of innovations in education be improved.

In the past, policy has frequently been formulated, and changes made to school structures, methods and curricula without the benefit of scientifically-based information, comparative statistics or an international exchange of information. Innovation have been made without the necessary feedback, which should be provided by evaluation. Even where there are no resource constraints, there is still need for more and better information on and evaluation of, educational practice. This is particularly true for those countries where future educational expansion is virtually unrestricted and the growth of economic resources subject to very real limits. Educational research will never formulate educational policy, but it can certainly inform it. Educational decisions are now being taken, for example, without sufficient information being obtained concerning the relative cost-benefits achieved by changes in teaching methods in parallel and in comprehensive structures. Future decisions will also be made in the absence of this information unless provision is made for the necessary research and development work. It is hoped that the analyses attempted in this report will prove useful to all those responsible for identifying educational priority areas which call for immediate action and for mobilising the research effort needed to define the type of action that can lead to a better educational system.

I

THE GROWTH OF SECONDARY EDUCATION

INTRODUCTION

In the development of secondary education in the OECD Member countries over the past 10-15 years one element has been common to all the countries concerned, the economically less developed as well as the highly developed, the European as well as the North American and Asian: namely, a numerical expansion which has eclipsed all other changes and in consequence has become one of the major concerns of present day policy. At first sight this expansion in numbers seems to have been affected very little by the structural differences between the educational systems in the OECD area. Countries with selective systems of secondary education such as the United Kingdom, the Netherlands, Belgium, Spain and Portugal have seen their enrolments increase as strongly as countries with comprehensive secondary education systems such as the United States and Japan. The increase in numbers has affected countries where participation in secondary education was already high at the outset of the period (e.g. United States and Japan), or fairly high (Belgium, the Netherlands, the United Kingdom and Sweden), as well as those where initial participation was low. How far differences in the types of educational systems and in economic and social conditions and, most of all, the major structural re-organisations of secondary education systems have affected the rate and the type of the numerical expansion can be ascertained only by a more detailed analysis.

An increase in enrolments is by definition a function of two factors: increased participation (i.e. enrolment ratios) and an increase in the size of the relevant age-group. From 1950 to 1965, that of participation was clearly stronger than that of the demographic factor. The " baby boom " experienced by most OECD countries immediately after World War II strongly influenced pupil numbers and frequently led to an impressive growth in total secondary enrolments but the steady increase in enrolment ratios has been the more consistent force behind observed enrolment increases.

A superficial examination of the increase rates (see Table 1) shows, however, that there is no general pattern in the increases. In many countries, the 1950 expansion was followed by an even larger one in the 1960's, though the rate varied considerably in the different countries.

The enrolment increase pattern is not determined only by the interplay of the two factors mentioned—increased participation, increase in the size of the age group—otherwise the enrolment ratios would increase more quickly when the secondary age-group is small than when it is large, and the demand for places in schools greater. The increase in school enrolments in a country is determined by many factors: social, economic and political. It is also dependent on the educational system itself: its structure, its policy and its traditions so far as admissions, promotion to higher grades and granting of leaving certificates are concerned. In later sections of this report the various types of interaction between the societal factors on one hand and the educational policy and the enrolment increase pattern on the other will be discussed in more detail.

STATISTICAL DATA

The statistical data used in this report are nearly all taken from national educational statistics publications. Nevertheless, they do not always give a complete or truthful picture of the educational situation. The main reasons for their incompleteness are :

a) The data concern the number of registered pupils. In some cases, there is a formal numerical registration, but attendance varies at different times of the year. This is particularly true—though less so now than in the past—of the primary and lower secondary schools in the rural areas of some Mediterranean countries, where attendance at school is interrupted by harvesting, etc. Detailed information is not available for every system, and reports tend to state the problem rather than to quantify it. The Turkish MRP Report[1] mentions that " village children who are enrolled at a primary school... are withdrawn by their parents for short periods each year to assist in harvesting or other farm activities " and " drop-outs, temporary or permanent, are most serious at the primary level, notably in rural areas where parental opposition and the demands of farm and other work are important contributory factors... ". An Italian report[2] asserts that in 1960/61, of 182,186 *Evasori e Inadempienti* from primary education, 30,461 were classified as *negligenti*; it indicates that at the lower secondary level the major reasons for non-attendance were *not* the unavailability of schools but cultural, social and economic influences in the area. The Spanish MRP Report[3] also contains several examples of reasons for poor school attendance (" child labour " and looking after younger brothers and sisters are quoted in the report as two of the reasons for poor attendance). Though periodic absence is certainly diminishing throughout Western Europe, it still plays a role in parts of all the Mediterranean countries.

b) Public and private education systems are often mentioned separately; the information concerning them is not always comparable and, especially for the latter, is often incomplete. One example of this is given in the Spanish MRP Report[4] which states that " the metropolitan area (i.e. Madrid) has a low enrolment rate for its high income levels. This may be explained partly ... by the existence, in these areas, ... of numerous unlicensed private schools ". The report says also that " the number of strictly ' free ' pupils (attending no educational establishment) must be quite appreciable " (at secondary level).[1] In the MRP Report on Turkey the statistical data on private enrolments are not comparable with those for the public sector. In Belgium, approximately 6.000 pupils in secondary schools (mainly in non-aided Catholic schools) were not included in the 1964-65 figures, and this is roughly 4 per cent of the pupils in secondary schools.[2] In the Dutch statistics, data concerning some types of secondary and many types of post-secondary schooling are registered only in the overall enrolment tables. not in the more detailed tables.[3]

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[1] *The Mediterranean Regional Project: Turkey*, OECD, Paris, 1965, page 90.

[2] Relazione della Commissione di Indagine Sullo Stato e Sullo Sviluppo della Pubblica Istruzione in Italia. I Testa della Relazione, Roma 1963, pp. 229-230.

[3] *The Mediterranean Regional Project: Spain*, OECD, Paris 1965.

[4] *Ibid*, p. 40.

c) Hardly any complete statistics are available on informal education schemes such as training by correspondence, private evening courses, etc., most of which are in the secondary vocational and technical sector. Neither are some private courses preparing students for the State examinations of general secondary schools (*baccalauréat, matura*) included in the official statistics, and information is also far from complete for part-time industrial training courses. Some Member countries, such as Germany, Austria and the Netherlands, where these courses are strongly developed, include these pupils in the official statistics. But in all these countries there is an unknown number of pupils enrolled in industry-based training schemes leading to various, recognized of unrecognized, qualifications. The Swedish EIP Report gives an impression of the variety and relative importance of adult education schemes in Sweden, most of which are similar to upper secondary programmes.[4] The Irish EIP Report[5] mentions that shop-floor training and educational activity in industrial firms are not included in the report owing to lack of data.

Because of these gaps and inconsistencies in statistical reporting the data on secondary education enrolments presented in this report are for many countries certainly under-estimated. This applies particularly to the highly industrialised countries. In several of them correspondence courses and private and industrial training courses constitute an alternative system of secondary-level education which enrols a high proportion of those youngsters who do not attend formal education. This has important implications for a further expansion of the secondary education system: any further increase in full-time education enrolment ratios may come about only by a shift of pupils from informal to formal education programmes.

Apart from the exclusion of certain types of education, the standard of educational statistics in almost all OECD Member countries is still far behind that recommended in the OECD Handbook of educational statistics.[6] Statistics on secondary education are certainly more complete and comparable than in the early 1950's, but still show great inconsistencies and gaps: although more countries now publish annual educational statistics, some still either do not, or do so in such a way as not to be easily accessible to foreign readers; often data are published with a delay of several years. In mid 1967 the most recent data for some countries concerned 1962-63 enrolments and, in many cases, 1964-65; practices vary greatly in reporting enrolments by grade and/or by year of birth; frequently, therefore, precise comparisons of enrolment ratios cannot be made and care must be taken in comparing ratios in one educational system with another; recent reforms in the structure of secondary education in many OECD Member countries mean that comparisons over time are often valueless. In France, qualitative change has made impossible certain types of comparisons; similar problems arise in Denmark, Norway, Sweden, Italy and Yugoslavia.

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[1] *Ibid*, p. 55.

[2] See : *Annuaire Statistique de l'Enseignement*, Tome 9, 1964-1965, Bruxelles 1966, p. 10.

[3] See : *De Ontwikkeling van het Onderwijs in Nederland*, Ed. 1966, Vol. 3, Technische Toelichting, p. 7-8.

[4] See : *Educational Policy and Planning: Sweden*, OECD, Paris 1967, pp. 263.

[5] See : *Investment in Education : Ireland*, OECD, Paris 1966, p. 17.

[6] *Methods and Statistical Needs for Educational Planning*, OECD, Paris 1967.

THE CONCEPT OF « SECONDARY EDUCATION »

A strict definition common to all countries of what constitutes " secondary education " (distinguishing it from primary and higher education) is not practicable for the purposes of this report. The classification of the OECD Handbook of Educational Statistics has been used when suitable; enrolments in grade 7 and upwards were considered as secondary (for example in Sweden).

In some cases, the Council of Europe classification corresponded better to available statistical data, and stages II and III of this classification were considered as secondary education. However, inconsistencies could not be avoided: in Yugoslavia grades 5-8 of primary school were listed as secondary for various reasons[1] thus using a wider definition than that of either OECD or the Council of Europe. Furthermore, the separating of secondary and higher education raised vast problems: for example, where technical or teacher training courses start at grade 9 or 10 and finish at grade 13, 14 or even 15. Where these are included with secondary education enrolments this has been mentioned. Differences also exist between Member countries in the total number of years of primary and secondary education before pupils can transfer to higher education: in Germany, Italy and the United Kingdom, 13 years; in Turkey, only 11; in the Netherlands, 13, if the pupil follows a " preparatory class " before entering upon the " academic "-type general secondary schools, 12 if he does not. The age at which children enter primary education also varies: from 5 in the United Kingdom to 7 in Sweden[2]. These differences in age of entry to primary, secondary and higher education, and the varying lengths of secondary schooling in the different countries make comparisons extremely difficult between countries as to the meaning of enrolments and enrolment ratios.

The term " secondary education " covers many types of schooling with different objectives and duration. The usual classification distinguishes the following main types: " academic " or " long " general course; " non-academic " or " short " general course; vocational or " short " technical course; " long " technical course (sometimes simply called " technical " as distinguished from " vocational "); teacher training. In some countries special upper primary courses exist, parallel to secondary courses; in this report these have been listed, where possible, as secondary education.

The formerly sharp distinctions in secondary education programmes have gradually lost much of their importance and, in general, the categories have become much less distinct than ten or fifteen years ago. Three examples of this development can be given:

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[1] The main reason being that, until 1958, junior departments of secondary schools existed parallel to upper primary schools.

[2] See Table 54 in Chapter II for the age at which children enter elementary education.

a) University preparatory " academic "-type education, which was once a single, special type of school (*lycée, gymnasium* or grammar school) is no longer confined to a particular type of school. An increasing number of certificated leavers from other types of general secondary or technical schools are being granted admission to higher education. As a result, potential entrants to higher education have become difficult to identify and certainly do not come exclusively from one type of secondary school;

b) The distinction between general and technical education has become fluid now that technical streams have been introduced into academic secondary schools;

c) In the vocational sector, the increase in voluntary enrolments, longer compulsory schooling and curricula reforms mean that specifically vocational education has given way to the prolongation of general education. The former clear distinction between vocational and technical education no longer exists.

Sometimes, two distinct types of schooling have been merged into one in which different vocational-technical qualifications can be attained at successive stages. The identifying of a vocational sector differs according to country; in France the short course of the 2nd cycle of secondary education is clearly vocational, but no counterpart can be found in the English secondary modern school.

Recent school reforms in several OECD Member countries make the distinction in secondary education between " junior ", " lower " or " first level " stage and the " senior ", " upper " or " second level " stage much clearer, particularly because of the amalgamation of the syllabuses for the 10-12 to 14-15 year age-group into one general junior secondary syllabus. In several countries this distinction has been part of educational practice for a long time and it has acquired a precise and accepted meaning. This is particularly true of the junior and the senior high school in the United States and, though more recently, the junior and senior high school in Japan, and the lower and the upper cycle of secondary education in Belgium, Italy and Turkey. In other countries the situation has changed during the period which is being considered in this report. In France, with the re-organisation of secondary education in 1964, a clear distinction has been made between the first and second cycles of secondary education; in Sweden the several types of lower secondary schools have been merged and now form the upper grades of the comprehensive school. As streaming in this school starts in grade 7, it seems logical to consider grades 7-9 as lower secondary and the three types of secondary education to which pupils can transfer after grade 9 as upper secondary.

I. THE EVOLUTION OF SECONDARY SCHOOL ENROLMENTS

a) TOTAL ENROLMENTS

Secondary school enrolments in OECD Member countries (except Iceland, but including Finland) over the period 1950-65 are given in Table 1[1]: the increase in secondary enrolments between 1955 and 1965 in the OECD

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[1] See Table 47 at the end of this Chapter, for total enrolments in primary, secondary and higher education from 1950 to 1965.

TABLE 1. TOTAL ENROLMENTS IN SECONDARY

		1950/51	1855/56	1960/61	1965/66
Austria	Actual Number (including part-time « Berufsschulen »)	563,269[1]	611,843	600,361	600,648
	Index	*92*	*100*	*98*	*98*
Belgium	Actual Numbers	361,895[2]	390,863	525,431	620,475[3]
	Index	*93*	*100*	*134*	*159*
Canada	Actual Numbers	394,000[1]	608,683	882,247	1,263,725[3]
	Index	*65*	*100*	145	*208*
Denmark	Actual Numbers (G)	98,171[1]	134,861[4]	139,193[5]	158,931
	Index	*73*	*100*	*103*	118
Finland	Actual Numbers	173,685	226,635	343,198	425,875
	Index	*77*	*100*	*151*	*188*
France	Actual Numbers (full-time)	1,055,648	1,476,000[6]	2,010,448[7]	3,060,861[3]
	Index	*72*	*100*	*136*	*207*
	Actual Numbers (full and part-time)	n.d.	1,613,900	2,173,648	3,110,661
	Index	—	*100*	*135*	*193*
Germany	Actual Numbers (upper primary and part-time included)	n.d.	5,610,353	5,246,239[7]	5,571,753
	Index	—	*100*	*94*	*99*
	Actual Numbers (upper primary and part-time excluded)	981,047	1,371,479	1,438,882	1,679,625
	Index	*72*	*100*	*105*	*122*
Greece	Actual Numbers	n.d.	209,802	327,779	377,205[8]
	Index	—	*100*	*156*	*180*
Ireland	Actual Numbers	73,225	86,835	111,197	145,828
	Index	*84*	*100*	*128*	*168*
Italy	Actual Numbers	1,220,566[1]	1,507,968	2,184,046	3,014,478
	Index	*81*	*100*	*145*	*200*
Japan	Actual Numbers	7,267,633	8,475,693	9,125,918	11,030,689
	Index	*86*	*100*	*108*	*130*
Luxembourg	Actual Numbers	7,325	8,009	10,508	11,253[9]
	Index	*91*	*100*	*131*	*141*

area was nearly 17 million, of which approximately 7.5 million were in the European Member countries and nearly 9.5 million in the three non-European countries. It must be noted that the percentual increase over this period in the three non-European countries was nearly as high as that in the European countries. From 1950 to 1965, the total enrolment increase was approximately 23 million, or almost 90 per cent.

Only Austria and Germany have not experienced this strong enrolment growth[1]. The explanation for the exceptional position of these two countries is to be found in their peculiar conditions: first of all, contrary to

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[1] For Germany, this does not apply to enrolments in *gymnasia* and in upper secondary schools, with the exclusion of part-time and upper primary enrolments.

SCHOOLS AND GROWTH INDICES (1955 = 100)

		1950/51	1955/56	1960/61	1965/66
Netherlands	Actual Numbers..	582,372	740,340	1,050,430	1,130,274[3]
	Index........	*79*	*100*	*142*	*153*
Norway	Actual Numbers..	84,771[1]	100,646	143,420	179,734
	Index........	*84*	*100*	*143*	*179*
Portugal	Actual Numbers..	89,402	125,074	220,782	291,000[3]
	Index........	*71*	*100*	*177*	*233*
Spain	Actual Numbers..	386,723	506,183	714,349	1,121,750[3]
	Index........	*76*	*100*	*141*	*222*
Sweden	Actual Numbers..	174,684[2]	205,819	285,147	275,165[3]
	Index........	*85*	*100*	*139*	*134*
Switzerland	Actual Numbers (G)	90,866[1]	124,839[4]	138,450[3]	n.d.
	Index........	*73*	*100*	*111*	
Turkey	Actual Numbers..	146,900	242,900	467,500	721,500
	Index........	*61*	*100*	*193*	*297*
United Kingdom (Engl. and Wales)	Actual Numbers..	n.d.	1,914,814	2,723,158	2,829,747[3]
	Index........	n.d.	*100*	*142*	*148*
United States	Actual Numbers (P)............	9,363,000	11,760,000	14,354,000	18,200,000
	Index........	*80*	*100*	*122*	*155*
Yugoslavia	Actual Numbers with upper primary..........	513,203[2]	632,618	1,410,374	1,895,157[8]
	Index........	*81*	*100*	*223*	*300*
	Actual Numbers without upper primary	234,237	265,318	350,147	566,346
	Index............	*88*	*100*	*132*	*213*

1. 1951/52.
2. 1952/53.
3. 1964/65.
4. 1956/57.
5. 1961/62.
6. 1954/55.
7. 1959/60.
8. 1963/64.
9. 1962/63.

P = Public only.
G = General only.

NOTE. See Glossary to Table 47.

almost all other countries, their birth-rates were high during the last war and dropped strongly in the after-war period. Therefore, secondary enrolments were high in the 1950's but did not rise in the 1960's in spite of a strongly increased participation. The higher birth-rates after 1960 in these countries have not yet begun to affect secondary education enrolments. On the other hand, the increased participation factor had a weaker effect on total enrolment increases than in other countries. Because the bulk of the secondary enrolments in Austria and Germany is in the compulsory schooling age (10-14), total enrolments are much more dependent upon the demographic evolution than in most other countries.

A summary of the increases in secondary enrolment from 1950 to 1965 is shown in Table 2.

TABLE 2. SUMMARY OF CHANGES IN TOTAL ENROLMENTS IN SECONDARY EDUCATION

	ENROLMENTS HAVE DOUBLED IN:	ENROLMENTS HAVE NEARLY DOUBLED IN:	ENROLMENTS HAVE INCREASED BY THREE QUARTERS	ENROLMENTS HAVE INCREASED ABOUT 50 %	ENROLMENTS HAVE INCREASED BY 30 %	ENROLMENTS HAVE BEEN STABLE OR DECREASED
1955-1965	Canada. France. Portugal. Turkey. Yugoslavia. Italy. Spain.	Finland.	Norway. Greece. Ireland. United States.	Belgium. Netherlands. England and Wales.	Denmark. Japan. Sweden. Luxembourg.	Austria. Germany.

	TREBLED IN	MORE THAN DOUBLED IN	DOUBLED IN	INCREASED BY THREE QUARTERS	INCREASED LESS THAN HALF
1950-1965	Canada. France. Yugoslavia. Turkey. Portugal.	Finland. Spain. Italy.	Norway. Netherlands. United States. Ireland.	Denmark. Sweden. Belgium. Luxembourg. England and Wales.	Germany. Austria. Japan.

TABLE 3. AGE-GROUPS 10-14 AND 15-19 IN OECD MEMBER COUNTRIES IN 1950, 1965, 1980

COUNTRY	AGE-GROUP 10-14					AGE-GROUP 15-19				
	1950	1965	1980	% CHANGE 1950/1965	% CHANGE 1965/1980	1950	1965	1980	% CHANGE 1950/1965	% CHANGE 1965/1980
Austria	548,900	477,446	649,647	— 13.0	36.1	441,900	490,943	624,910	11.1	27.3
Belgium	570,800	721,800	860,000	26.5	19.1	623,000	715,500	780,000	14.8	9.0
Canada	1,143,500	2,040,100	2,468,300[1]	78.4	21.0	1,108,300	1,775,600	2,293,800[1]	60.2	29.2
Denmark	315,700	372,200	421,800	17.9	13.3	292,300	422,200	377,500	44.4	— 10.6
France	2,741,000	4,115,900	4,122,200	50.2	0.2	3,112,000	3,994,000	4,069,900	28.3	1.9
Germany	4,248,100	3,893,300	4,672,000	— 8.4	20.0	3,436,600	3,490,000	4,786,000	1.6	37.1
Greece	765,691	709,964	740,795	— 7.3	4.3	789,398	729,956	734,888	— 7.5	0.7
Japan	8,710,000	8,732,000	n.d.	0.3	n.d.	8,530,000	11,444,000	7,595,800[1]	34.1	— 33.6
Iceland	11,448	20,304	n.d.	77.4	—	12,183	17,806	23,312	46.2	31.0
Ireland	260,900	285,000	341,000[2]	9.2	19.7	241,200	263,000	310,000[2]	9.0	17.9
Italy	4,189,000	3,981,000	4,633,000	— 5.0	16.4	4,053,000	4,198,000	4,452,000	3.6	6.1
Luxembourg	n.d.	n.d.	n.d.	—	—	n.d.	21,880	n.d.	—	—
Finland	327,400[4]	442,065	n.d.	35.0	n.d.	317,500[4]	488,616	381,940[1]	53.9	— 21.8
Netherlands	824,500	1,105,400	1,340,600	34.1	21.3	810,800	1,167,300	1,203,000	44.0	3.0
Norway	211,000	302,100[3]	326,800	43.2	8.2	204,000	316,500[3]	299,500	55.1	— 5.7
Portugal	799,700	846,300[3]	1,019,200	5.8	20.4	811,000	835,500[3]	961,300	3.0	15.1
Spain	2,326,800	2,672,978	2,949,974	14.9	10.4	—	2,570,964	2,912,421	n.d.	13.3
Sweden	451,200	541,602	628,902	20.0	16.1	416,300	631,630	535,330	51.7	— 15.2
Switzerland	306,500	399,800	432,900	30.4	8.3	327,800	417,300	421,500	27.3	1.0
Turkey	2,354,700	3,848,864	n.d.	63.5	n.d.	2,388,000	2,918,806	—	22.2	—
United Kingdom	2,835,000	3,812,000	4,939,000	34.5	29.6	2,736,000	4,300,000	4,736,000	57.2	10.1
United States	11,351,000	18,853,000	21,495,000	66.1	14.0	10,663,000	16,924,000	20,525,000	58.7	21.3
Yugoslavia	1,717,200	n.d.	n.d.	—	—	1,771,100	1,627,765[1]	1,706,430[1]	— 8.1	4.8

1. Estimates have been made for these countries.
2. 1981.
3. 1966.
4. 1949.

Sources: *Demographic Trends*, OECD, 1966.
Demographic Yearbook U.N. (various years).

Five of the six Mediterranean countries are among those with the highest increases in total enrolments; their relatively low enrolment ratios at the beginning of the period are probably responsible for the size of these increases. This also explains why Greece, the sixth Mediterranean country, showed a more modest increase: it had a higher ratio for secondary education at the beginning of the period than the others. In 1960, nearly one-third of the age-group was in secondary schools in Greece, compared with only 15 per cent in Spain and 18 per cent in Turkey.

But also, in the more developed countries, there is a high correlation between enrolment increases over the period 1950 to 1965 and the level of participation in secondary education at the outset of this period. As a rule, in the total OECD area, enrolment increases have been higher in those countries where these initial participation rates were lowest. Later in this report details are given of the extent to which, since 1950, differences in participation rates in OECD countries have been narrowed.

A second general factor which determined this increase in total enrolments has been the changing size of the secondary school age-group as shown by Table 3, which gives the size of the 10-14 and 15-19 age-groups in 1950, 1965 and 1980. For the age-group 10-14, the variations between 1950 and 1965 differ strongly in individual countries with, at the extremes Canada, France, Iceland, Turkey and the United States (increases over 50 per cent), and Austria, Germany, Greece and Italy (slight decreases). For the same time period Canada, Finland, Norway, Sweden, the United Kingdom and the United States registered over 50 per cent increases for the 15-19 age-group, whereas the size of this age-group showed a slight decrease in Greece and Yugoslavia. For the next 15 years (1965-1980) the differences between the countries are much less striking for both age-groups, and the changes much less impressive. For the 10-14 age-group, Austria and Germany are in the highest increase group (over 20 per cent) together with Canada, the Netherlands, Portugal and the United Kingdom, whereas no country shows a decrease. The variations are stronger for the 15-19 year age-group: Austria, Canada, Germany and Iceland will have over 25 per cent increases, and Finland and Japan more than 20 per cent decreases. Table 4 shows the effect of this for Europe, North America and Japan.

The biggest increase between 1950 and 1965, for both age-groups, took place in North America. In the OECD area as a whole there was an increase of over 10 million (or one quarter) in the size of the 10-14 age-group, and of approximately 17 million (or over 40 per cent) in that of the 15-19 age-group. From 1965 to 1980 the size of the 15-19 age-group in the OECD area shows no increase, due to a slowing-down of growth in North America and a striking fall in Japan.[1] As the 10-14 age-group also shows no major increase (half of that from 1950 to 1965) in Europe or North America, demographic evolution between now and 1980 will have only a minor effect on school enrolment increases in the area as a whole, whereas it has been a major factor in the past 15 years. Growth between now and 1980 will be mainly the result of increased participation.

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[1] However, as the 1980 figure for Japan is an extrapolation, the actual 1980 figure may differ slightly from the one given here.

TABLE 4. AGE-GROUPS 10-14 AND 15-19 IN THE OECD AREA, 1950, 1965 AND 1980

ROUGH TOTALS

In thousands.

AREA	AGE-GROUP 10-14					AGE-GROUP 15-19				
	1950	1965	1980	% CHANGE 1950/1965	% CHANGE 1965-1980	1950	1965	1980	% CHANGE 1950/1965	% CHANGE 1965/1980
Europe	25,805.5	28,547.7	28,077.8	+ 10.6	— 1.6	22,784.1	29,617.7	29,315.9	+ 30.0	— 1.0
North America	12,494.5	20,893.1	23,963.3	+ 67.2	+ 14.7	11,771.3	18,699.6	22,818.8	+ 58.9	+ 22.0
Japan	8,710.0	8,732.0 (1966)	n.d.	+ 0.3	—	8,530.0	11,444.0	7,595.8	+ 34.1	— 33.6

1. 1966.

NOTE. 10-14 age-group data not included for:
Luxembourg 1950, 1965, 1980.
Yugoslavia 1965, 1980.
Finland, Turkey, 1980.
15-19 age-group data not included for:
Luxembourg 1950, 1980.
Spain 1950.
Turkey 1980.

In many Member countries from 1955 to 1965 may well have been the period of greatest expansion in secondary enrolments. It is unlikely that growth will continue as strongly as over the past decade, not only because of the above-mentioned demographic development and because the percentage that is not yet enrolled is getting progressively smaller, but also because the motivation for this " residue " to stay in school is low and will remain so if no new incentives are developed. As a matter of fact, already in a number of industrialised Member countries (United Kingdom, Sweden, Belgium) the expansion after 1960 has slowed down considerably; in a few Mediterranean countries, in particular in Spain, Turkey and Yugoslavia, the strong growth in the 1950's is likely to continue during the next 10 to 15 years.

In Table 5, the enrolment increase from 1955 to 1965 in higher education is compared with that at secondary level. In many Member countries, enrolments in higher education from 1955 to 1965 increased faster than those in secondary (e.g. Austria, Belgium, France, Netherlands and Sweden). But there is an important group where secondary enrolments grew faster and which again includes four Mediterranean countries: Italy, Portugal, Spain and Yugoslavia, probably because higher education was already fairly well developed, whereas secondary education has started expanding only in the past decade. For example, in the late 1950's, the percentage of nineteen year-olds entering higher education in Italy was as

TABLE 5. GROWTH INDICES, SECONDARY AND HIGHER EDUCATION, 1955-1965

COUNTRY	HIGHER	SECONDARY
Austria	256	98
Belgium	197	159
Canada	245	208
Denmark	221	118
Finland	258	188
France	241	207
Germany	154	99
Greece	246	180[1]
Ireland	189	168
Italy	175	200
Japan	182	130
Luxembourg	504	141[2]
Netherlands	219	153
Norway	351	179
Portugal	154	233
Spain	184	222
Sweden	263	134
Switzerland	195	n.d.
Turkey	263	297
United Kingdom	n.d.	148
United States	208	155
Yugoslavia	182	300

1. 1963/1964.
2. 1962/1963.

high or higher than in Austria, Denmark, Germany and the Netherlands. Further, in Yugoslavia, although the enrolment ratio in higher education was roughly the same as in France, enrolment for 15-19 year olds was only a little over half the French figure.

Table 6 shows, for a number of countries, the total school population as a percentage of total population and as a percentage of total active population. In Canada, Japan, Ireland, the Netherlands, the United States and Finland, more than 20 per cent of the total population is in school; Portugal and Italy have the lowest percentages (less than 15) but, as the size of the school age-group as a percentage of the total population varies greatly between Member countries, this percentage should be interpreted with care. In the first place, it is an index of the effort which education represents for a country. The strain education puts on a country's manpower resources is more directly expressed in the second index: total school population as compared with total active population. The percentage here show, for example, that Austria has 34 children in school for every 100 active persons. Ireland, the Netherlands and the United States over 60, but Austria, Denmark, Portugal, Sweden and Turkey fewer than 35. It is clear that in the latter countries the strain which education puts on the country's economic resources is less great than in the countries where the active population is less than twice as numerous as the school population.

TABLE 6. SCHOOL POPULATION, TOTAL POPULATION AND ACTIVE POPULATION IN 1965

COUNTRY	TOTAL POPULATION	ACTIVE POPULATION	SCHOOL ENROLMENTS	ENROLMENTS AS A % OF TOTAL POPULATION	SCHOOL ENROLMENTS PER 100 ACTIVE POPULATION
Austria	7,197,261	3,335,870	1,134,317	15.8	34.0
Belgium	9,464,000	3,726,000[1]	1,663,067	17.6	44.6
Canada	19,549,000	13,049,100	5,142,033	26.3	39.4
Denmark	4,732,300	2,282,000[1]	728,703[3]	15.4	31.9
France	48,206,600	19,842,900	9,800,011[3]	18.8	45.8
Germany	57,864,000	25,725,000	9,537,206	16.5	37.1
Japan	98,865,000	n.d.	21,913,548	22.2	n.d.
Italy	53,267,000	20,348,000[1]	7,900,242	14.8	38.8
Ireland	2,862,000	1,037,000	669,963	23.4	64.6
Netherlands	12,204,800	4,378,700	2,647,218[1] [3]	21.7	60.4
Norway	3,734,900[2]	1,367,800[2]	628,050[3]	16.8	45.9
Portugal	9,471,300[2]	3,669,100[2]	1,192,000	12.6	32.5
Spain	31,574,794	11,048,000	5,003,020	15.8	45.3
Sweden	7,684,922	3,527,000[2]	1,202,188	15.6	34.1
Turkey	31,150,000	16,937,000	4,816,000	15.5	28.4
United Kingdom	54,557,000	25,050,000	n.d.	n.d.	n.d.
United States	194,057,000	75,600,000	45,425,271[P]	23.4	60.1
Yugoslavia	19,508,000	8,763,000	3,754,800	19.2	42.8
Finland	4,612,000	n.d.	927,881	20.1	—

1. 1964.
2. 1966.
3. Higher school enrolments include university students only.

P = public only.

b) ENROLMENT RATIOS AND ENROLMENT INCREASES

Table 7 shows the enrolment ratios for the age-group 14-18 in 1965.

TABLE 7. ENROLMENT RATIOS IN SECONDARY EDUCATION, 1965 OR LATEST YEAR

	COUNTRY	AGE-GROUP	YEAR
Over 80 % enrolled	United States.	14-18	1960
	Japan.	15-18	1964
60-80 %	Netherlands.	14-18	1964
	Canada.	15-18	1961
40-60 %	France.	14-18	1964
	Belgium.	14-18	1964
	Austria.	14-18	1965
	Germany (incl. part-time).	14-18	1965
	Denmark.	14-18	1960-62
	Sweden.	14-18	1963
	Yugoslavia.	15-18	1965
20-40 %	Italy.	14-18	1965
	Germany (full-time only).	14-18	1965
	England and Wales.	14-18	1965
	Greece.	12-17	1960-61
Less than 20 % enrolled	Spain.	14-17	1960
	Portugal.	14-18	1963
	Turkey.	15-19	1960

In the past fifteen years, increases in enrolment ratios have had as much and in many cases more impact on enrolment increases than demographic factors—i.e. increases in the size of the age-group eligible for secondary school. The figures in Table 4 indicate that in the next fifteen years increases due to the demographic factor are also bound to be very modest. Table 7 shows that, in the future, particularly in North America,

TABLE 8. ENROLMENT RATIOS BY AGE IN SELECTED COUNTRIES (FULL-TIME ONLY)

COUNTRY	YEAR	14	15	16	17	18
Denmark (average)	60/62	87.0	70.0	46.6	10.0	8.0
United States	1960	95.3	92.9	86.3	75.6	50.6
Netherlands	1961	85.0	66.7	53.8	44.7	34.0
Sweden	1963	55.1	32.2	26.6	15.2	
Portugal	1963	22.1	20.4	19.3	15.6	13.3
Germany	1965	78.3	47.8	26.5	16.9	11.2
Austria	1965	67.0	59.0	53.1	35.8	17.0
Belgium	1964	84.0	69.7	55.1	42.2	30.7
France	1964	71.9	57.8	50.0	36.7	24.4
England and Wales	1965	100.0	62.5	25.7	13.7	4.8
Italy	1964	40.0	28.8	24.5	19.0	13.8

Japan and in some North West European countries, increased participation will not cause enrolment to increase as strongly as over the past fifteen years, simply because enrolment ratios up to 18 years of age will be approaching a ceiling.

Since in most OECD Member countries initially all children up to 14 years of age are already in school, the future increases in enrolments will occur mainly in the age-group 15-18. The few forecasts available confirm the above-formulated hypothesis: that in the future the increase in the participation rate in secondary education will be slower than in the past; several decades will be needed to achieve 100 per cent enrolments of the 15-18 year age-group. By 1980, in all North Western European countries (and (Yugoslavia), between 60 and 90 per cent of this age-group might reasonably be expected to be in full-time education, and in the Mediterranean countries, between under 30 per cent in Turkey and Portugal and over 50 per cent in Italy and Greece.

Table 9 illustrates this expected participation increase for Austria.

TABLE 9. AUSTRIA : PERCENTAGE OF AGE-GROUP IN FULL-TIME SCHOOLING

YEAR	14	15	16	17	18
1955	57.5	47.8	43.0	26.7	15.5
1965	67.0	59.0	53.1	35.8	17.0
1975	87.5	65.5	60.2	54.4	38.0

Source: Educational Policy and Planning: Austria, OECD, 1968.

Over the 20-year period 1955 to 1975, virtually all 14 year olds are expected to be in school, two out of three 15 and 16 year olds, one in two 17 year olds, and more than a third of the 18 year old age-group. The increases will be greatest for the ages with lowest initial enrolments: the enrolment rate for the 18 year olds will double between 1965 and 1975; for the 17 year olds between 1955 and 1975, whereas for the 16 year olds it will increase by a half over the whole period. Although the pattern, timing and rate of increase will differ from country to country, this type of development is expected in North West Europe over the next decade.

In the Mediterranean area development may not be the same because the starting point is different, as shown by Table 10.

TABLE 10. SPAIN : PERCENTAGE OF AGE-GROUP ENROLLED IN SCHOOL

YEAR	6-10	11-13	14-17	18-24
1960	88.9	68.3	15.1	4.2
1975	99.0	99.0	47.9	6.4

Source: Mediterranean Regional Project: Spain, OECD, 1965.

All the MRP countries (except Turkey) hope to enrol all the lower secondary age-group (i.e. under 14 years of age) by the middle of the seventies, while expanding enrolment ratios in upper secondary education (in Spain they may be trebled); these ratios will still be below those expected in the economically more developed countries, however.

Table 11 shows the enrolment ratio increase for an approximate ten-year period for five countries in North West Europe. These data, however limited they are, show how difficult it is to draw general conclusions concerning the impact changes in school structure and similar qualitative factors may have had on expansion. Strong growth in ratios took place in countries which introduced comprehensive types of junior secondary education, and in those which maintained selective and parallel secondary education structures. It must, however, be added that the impact of the changes in the structure of secondary education in Sweden and France on enrolment ratios will be fully effective only in the next ten years; enrolment ratios have, on the whole, increased significantly. For the 17 year old age-groups, France and Belgium have increased nearly 50 per cent in six or seven years; over a ten-year period in England and Wales the increase was nearly 70 per cent. In Sweden, for the age-group 17-19, enrolment ratios doubled over a ten-year period. The only exception to these fast rates of increase was the Netherlands where enrolment ratios were high in the early fifties and the rate of increase consequently slower than in other countries. Actual increases were still considerable, however.

TABLE 11. ENROLMENT RATIOS FOR SELECTED COUNTRIES
INCREASES OVER APPROXIMATELY A 10-YEAR PERIOD

COUNTRY	YEAR	14	15	16	17	18	19
Belgium	1957	69.4	55.0	42.2	29.7	20.9	14.6
	1964	84.0	69.7	55.1	42.2	30.7	21.9
France	1958	68.3	53.0	43.4	28.1	16.4	9.9
	1964	71.9	57.8	50.0	36.7	24.4	16.4
Netherlands	1953	77.8	57.3	48.2	39.4	29.5	21.5
	1961	84.9	66.7	53.8	44.7	34.0	23.6
Sweden	1953	55.1	32.2	26.6	→	15.2	←
	1963	87.9	73.8	48.9	37.0	29.0	20.3
England and Wales	1955	—	32.6	16.9	8.1	2.7	—
	1965	—	62.5	25.7	13.7	4.8	—

There are no comparable figures for the Mediterranean countries except for Portugal (since 1957):

TABLE 12. PORTUGAL : INCREASE IN ENROLMENT RATIOS 1957-1963

YEAR	14	15	16	17	18	19
1957	12.7	10.7	9.9	8.6	7.4	5.9
1963	22.1	20.4	18.3	15.6	13.3	10.1

The most striking fact is the low level of enrolment rates in 1957, far below those in Table 11; but, by 1963, enrolment ratios had nearly doubled for every age. Although Portugal had had the lowest initial overall enrolment rate of Member countries, the extent of this increase is not exceptional in the Mediterranean region: in Italy, total enrolments in upper secondary schools increased from 412,349 to 1,223,688 between 1951 and 1960; in Turkey the 41,625 pupils in the State *lycées* increased to 107,019 between 1949/50 and 1959/60, and in Yugoslavia enrolments in upper secondary schools increased from 234,237 to 566,346 between 1952/53 and 1964/65.

c) CERTIFICATED LEAVERS FROM ACADEMIC SECONDARY EDUCATION

Among the consequence of the enrolment expansion in secondary education, the increase in the number of certificated leavers is the most tangible —and also, in terms of immediate social, economic and educational implications, the most important. On the whole, the labour market has easily absorbed the increased number of secondary leavers from technical and commercial schools, though their training and the numbers trained in particular fields did not always correspond to the immediate needs and although there have been indications of risks of unemployment of secondary leavers who had not completed any full course of secondary education.

The increase in the number of potential candidates for higher education has, on the contrary, been much less easily absorbed and has in many countries led to acute problems of accommodation. More than that, the discrepancy between the numbers of secondary graduates who had qualified for admission to higher education and the number of places actually available in higher education institutions—as well as discrepancies between the type of qualification of these graduates and the number of places available in particular fields of study and for the specific objectives set for each of them—has very often led to an acute crisis. The quantitative and qualitative discrepancy between the " output " of secondary education and the intake possibilities of higher education is at present the main problem of educational policy in a great number of the developed countries.

Therefore, particular attention must be given to the expansion in the number of pupils who successfully complete secondary education and particularly those who meet the traditional requirements for university entrance. The word " traditional " must be emphasized here, for many systems are beginning either to question these traditional entrance requirements (e.g. changes in the *baccalauréat* in France and discussion about the methods of assessment being used in the Swedish gymnasium) or to develop new types of educational institutions providing university entrance qualifications (e.g. the *Kolleg* in parts of Germany, and the recent extension of university entrance to graduates from technical education in Belgium and Yugoslavia). The significance of these changes for university entrance will be discussed later; at present, for Member countries, the traditional requirement is the passing of the *Abitur* in Germany, the *baccalauréat* in France, the *studentexamen* in Sweden, the *matura* in Austria and two Advanced levels in Britain. A picture of this expansion can be obtained by expressing the figures in two ways:

i) *In absolute numbers:* these figures indicate the volume of resources (teachers, school places, etc.) devoted to upper secondary education to meet the growing educational demand due to the larger age-group, plus higher enrolment rates.[1]

ii) *Relative figures:* absolute numbers give no indication of the proportion of the age-group enrolled or therefore of human resource utilisation, so that an age group calculation has also to be made. This is bound to be rough since the ages of the candidates for these examinations differ as between countries, and the age range in the same country is often wide, and certainly wider than that normally accepted. In France, for example, in 1961/62 in the *classes terminales* of the *lycées*, nearly one-third of the pupils were between 18 and 19, and 28 per cent over 19. All the latter and many of the former will have been delayed a year in their progress through school. Over 18,000 of the German boys born in 1945 or before were still in the *gymnasium* 20 years later. If it is considered that pupils should pass their *abitur* before their 19th birthday, then more than 66,500 pupils were " over age " in German *gymnasia* in 1964. Similarly in Sweden: in 1960 only 35 per cent of secondary school certificated leavers were aged 19 or under; 38 per cent were 20, and the remainder over 20.

Table 13 shows both absolute and relative figures for secondary school graduates in OECD Member countries. For most countries figures are given only under heading I, and refer to all pupils admissible to higher education. However, within countries, and within these group, this " admissibility " has very different meanings. In France, Germany, Spain, etc., these secondary leavers have indeed qualified for admission to higher education by virtue of their secondary certificate. In other countries this implies that they are potential candidates, but have to pass an admission test to be accepted. This applies to the United Kingdom and the United States. For a few countries, figures are also given under heading II and these include certificated leavers from other secondary streams who are eligible to enter specific types or faculties of higher education. In Austria, for example, Group I includes those from the former *Mittelschulen* or the present *Allgemeinbildende Höhere Schulen* only; Group II includes the *Handelsakademien* (business academies), the *Technische und Gewerbliche Lehranstalten* (technical and trade schools), the *Lehrerbildungsanstalten* (teacher training schools) and from 1963, the *Lehranstalten für Frauenberufe* (girls domestic science). For Italy, Group I includes the lyceum certificate holders; Group II includes those from secondary technical institutes and secondary teacher training institutes. In most countries this second group, which consists of relative newcomers to the group of potential higher education students, are not full candidates in the sense of Group I. The percentage of Group II which does in fact transfer to higher education is, however, increasing rapidly and this group should thus be considered in any discussion on the number of graduates from " academic " secondary education (meaning preparatory to higher education).

Table 13 shows large divergencies as between Member countries. Around 1950, in most European countries, 5 per cent or less of the relevant age-group qualified for admission to higher education; but in Belgium, Ireland and Norway, the percentage was much higher, and in the United

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[1] In Chapter IV of this report, the implications of the increased number of graduates for higher education will be discussed.

Germany:
  e = Estimated (for *Kolleg*).
  II. Includes *Ingenieurschulen;* only a small number of certificated leavers from these schools actually have access to higher education, however.

Greece:
  I. Includes lycée certificated leavers only.

Italy:
  I. Certificated leavers from *liceo classico* and *liceo scientifico.*
  II. Certificated leavers from *istituto magistrale* and *istituti tecnici.*

Luxembourg:
  I. Certificated leavers from *lycées.*
  II. Certificated leavers from *Arts et Métiers* and *écoles techniques.*

Netherlands:
  I. *Gymnasium* and HBS only.
  II. MSVM, HdS, HTS and *Onderwijzersakte.*

Portugal:
  I. Certificated leavers from " secondary classical education ".
  II. Intermediate.

Spain:
  I. *Prueba de Madurez.*

Sweden:
  I. Includes only general education certificated leavers, higher stage, (*Allmenlinie, Latinlinie, Reallinie*).
  II. Includes specialised technical schools (*Fackskola*).

Turkey:
  I. Lycée certificated leavers.
  II. Certificated leavers from vocational and technical. The number of technical certificate holders fell because the course was extended from 2 to 3 years.

United Kingdom:
  I. + two " A " levels.

United States:
  I. All high school certificated leavers.

Yugoslavia:
  I. Certificated leavers from *Gymnasium.*
  II. Graduates from technical and vocational schools and from secondary teacher training.

Switzerland:
  I. *Certificats de maturité*, types A, etc.

TABLE 13. CERTIFICATED LEAVERS FROM UPPER SECONDARY EDUCATION AND RATIOS AS A PERCENTAGE OF THE RELEVANT AGE-GROUP

TYPE OF GRADUATES / COUNTRIES	1950/1951		1955/1956		1960/1961		1965/1966	
	I	II	I	II	I	II	I	II
Austria	3,945	1,810	3,259	2,432	7,516	4,308	7,490	4,657
%	*3.54*		*2.9*	*2.2*	*7.3*	*4.2*	*9.0*	*5.6*
Belgium	8,469[1]		10,142	8,337	13,755	12,034	25,010	
%	*7.4*		*8.8*	*7.7*	*12.7*	*11.0*	*19.0*	
Denmark	2,803		3,368		5,455		7,260	
%	*4.7*		*5.7*		*7.0*		*8.0*	
Finland	14,120		17,787		28,039		48,444	
%	*22.6*		*27.4*		*37.7*		*49.4*	
France	n.d.		40,146		61,281		105,839	
%	—		*7.4*		*10.9*		*13.2*	
Germany	33,385[2]		32,846[2]		56,637	14,553[7]	50,364	19,070
%	*4.9*		*4.1*		*5.2*	*1.4*	*6.7*	*2.5*
Greece	n.d.		18,719		19,816		n.d.	
%	—		*12.2*		*15.7*		—	
Italy	24,258	35,525	25,670	48,128	31,958	70,177	39,255[8]	89,538[8]
%	*3.0*	*4.5*	*3.1*	*5.7*	*3.9*	*8.6*	*5.0*	*11.4*
Ireland	4,019		5,671		8,166		11,795	
%	*8.5*		*12.9*		*19.1*		*23.7*	
Japan	458,834		755,847		956,342		1,160,075[4]	
%	*26.9*		*44.3*		*51.7*		*50.7*	
Luxembourg	217[3]	89[3]	256	104	371	109	n.d.	n.d.
%	n.d.	n.d.	*6.5*	*2.6*	*9.4*	*2.8*	—	—
Netherlands	8,974	4,388	8,618	7,447	11,500	8,791	17,183[4]	12,270[4]
%	*5.5*	*2.7*	*5.3*	*4.6*	*6.3*	*4.8*	*7.4*	*5.3*
Norway	3,847		4,617		6,816		12,357	
%	*9.0*		*11.4*		*14.8*		*18.6*	
Portugal	2,386	265	3,040	266	3,917	200	n.d.	
%	*1.5*	*0.1*	*1.9*	*0.2*	*2.6*	*0.1*	—	
Spain (*Madurez*)	n.d.		10,355		13,505		20,337	
%	—		*2.4*		*2.8*		*4.0*	
Sweden	4,519	—	6,553	1,547	10,683	1,728	17,182[4]	5,270[4]
%	*5.4*		*7.1*	*1.7*	*10.0*	*1.5*	*13.6*	*4.2*
Turkey	5,568	9,284	8,024	9,400	11,377	14,954	25,098	18,730
%	*1.2*	*1.9*	*1.7*	*2.0*	*2.5*	*3.2*	*4.3*	*3.2*
United Kingdom (Engl. and Wales)	24,600		27,300		43,300		72,400	
%	*4.0*		*4.8*		*6.9*		*9.2*	
United States	1,199,700[3]		1,414,800		1,971,000		2,700,000	
%	*59.0*		*62.3*		*65.1*		*76.7*	
Yugoslavia	n.d.	n.d.	15,788[5]	48,911[6]	14,635	54,200	28,893	77,763
%	—	—	*4.7*	*1.5*	*5.3*	*19.7*	*7.9*	*21.3*
Switzerland	2,090		1,966		2,629		3,981	
%	*3.2*		*3.0*		*3.1*		*4.8*	

1. 1952/1953.
2. Estimated.
3. 1949/1950.
4. 1964.
5. 1957/1958.
6. 1974/1975.
7. 1961.
8. 1964/1965.

I. = Certificated leavers who are fully qualified for admission to university.
II. = Certificated leavers from other, usually technical and/or teacher training, programmes who have limited access to higher education.

GLOSSARY

AUSTRIA:

I. Includes general grammar schools only.
II. Includes teacher training, business academies, technical and trade schools and, as from 1963, girls' domestic schools.

BELGIUM:

I. General secondary, incl. *scientifique spécial.*
II. Certificated leavers from *degré supérieur de l'enseignement technique secondaire, enseignemeut normal primaire.*
Up to 1964/65 only group I certificated leavers had access to higher education. As from that date group I and group II candidates have equal rights to access.

DENMARK:

I. = *Studentereksamen.*

States it was about 60 per cent (but hardly comparable to the European situation). In 1965, in most European countries, absolute numbers had doubled or even trebled (Austria, Belgium, Denmark, Finland, France, Italy, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, Yugoslavia), and had increased five-fold in Turkey; in Germany and Luxembourg the increases were smaller but still noticeable.

The increase in the percentage of the relevant age-group was less important because of the growth in population. At present, in the European Member countries, the percentage of 18-19 year olds qualifying for admission to higher education is around, or over, 20 per cent for Belgium, Ireland and Norway; between 10 and 15 for France and Sweden and between 7 and 10 per cent for Austria, Denmark, the Netherlands, the United Kingdom and Yugoslavia. Only Germany, Turkey and Switzerland are below this last percentage. But if the additional group of secondary certificate holders listed under II is taken into account, the percentages increase in some countries considerably, and particularly in Austria, Belgium, Italy, the Netherlands and Yugoslavia. This implies that in many European countries (and traditionally in Japan and North America) the group qualifying for admission to higher education is no longer a selected minority group, but a considerable percentage of the age-group, and in several countries already totals one out of every five youngsters. A comparison between 1955/56 and projections for 1975/76 is even more striking. In Sweden, instead of roughly one in eleven being qualified for university entrance, it will be one person in three; in Norway, instead of one in ten, it will be one in four. In the majority of European Member countries between 1 in 7 and 1 in 3 young people are expected to qualify for admission to higher education by 1975. Exceptions to this rule will probably be Germany, the Netherlands, Portugal, Spain, Switzerland and Turkey (Italy is in a special category in view of its large number of Group II candidates); that is, three of the six Mediterranean countries and three developed Member countries where, in spite of alterations which will be described later, the parallel system of education has been retained.

One of the reasons for the age spread of candidates sitting for terminal secondary school examinations is the high failure rates in some European countries at the examinations. In France, for example, usually less than two out of three entrants for the *baccalauréat* are successful[1] (this proportion is made up almost equally of those who passed at the summer examination and those at the later re-sit examination). Many will, therefore, re-take the examination the following year. The number of pupils who have had to repeat a year sometime during their secondary school career is probably still more important, for repetition of grades is a very widely used practice in many European secondary school systems. As pupils may also repeat classes in primary schools, the effect on the age at which they get their secondary leaving certificate is bound to be considerable. In the French *lycées* in 1964/65, the percentage of pupils above the " normal " age was 46.9 in the " 6^{e} " and had increased to 62.1 per cent in the *classes terminales*. Finally, with the competition for certain faculties or universities, students who wish to ensure their admission may stay longer in secondary school to improve their chances. Part of the expansion in

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[1] In 1968 the pass rates were much higher as a consequence of the unusual conditions in which the examinations took place.

3rd-year Sixth Forms in England and Wales, and the high average age of Swedish gymnasia certificated leavers, may be explained by their effort to pass with high marks to ensure university admission. Finally, in Germany and in the Netherlands, a high *Abitur* or *eindexamen* pass rate may be achieved partly because candidates are allowed to sit only when their teachers consider they are certain to pass. These practices explain why, in many OECD countries, a large number of young people complete secondare and enter higher education much later than the official age.[1]

d) BREAKDOWN OF SECONDARY ENROLMENTS

The variety of types of " secondary education ", of syllabuses, and their objectives, length and approach, is very great, so that overall enrolment figures and ratios do not mean much and do in fact conceal important differences between countries. In some countries, enrolments in general secondary education may be the most important, in others, technical or vocational, or part-time schooling may be more important. Within general education, humanities and science have not the same enrolment rank order in the various countries, and in some only part of the general education syllabus gives access to higher education, other general courses leading to technical or teacher training programmes.

These are the largest categories. Within each type of course more subtle variations exist. In the pre-university type of upper secondary education, for example, Italy has only two variations: *liceo classico* and *liceo scientifico*; the Netherlands has three main types: *gymnasium, lyceum* and *Atheneum*, each sub-divided into two options in the upper years. In France the *seconde* (5th year of the *lycée* has 13 options which lead to the *baccalauréat*; in the *première* (6th year) the choice is reduced to 8 sections leading to the *baccalauréat* ; in the *terminale* (7th and last year) only 5 options exist. But parallel to these, a number of options prepare for the *brevet de technicien*. In the United Kingdom and the United States this notion of grouping students into " options " or " sections " does not exist: each student chooses a combination of subjects and attends classes in these subjects, and the variety of combinations is in principle unlimited. In most countries, in the technical and vocational streams, the variety is still much greater than in the general. Any diagrams found in international literature show only a rough framework of the almost infinite ramifications of vocational and technical training. Belgian educational statistics[2] mention, in *formation technique et professionnelle* of the *degré inférieur du cycle secondaire*, 15 main types with a total of 47 subdivisions; for the *degré supérieur du cycle secondaire* there are 15 main types with 35 sub-types. In Italy the 8 main types of *istituti tecnici* each has several specialisations in its second cycle (years 3-5), for example, the " Industrial Technical Institute " has 19 and the Nautical 3.[3]

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[1] In those Member countries where secondary certificate holders have to pass a university admission test, one of the main reasons why students enter into higher education at a later age is that unsuccessful candidates resit for the test during one or two, or even more, successive years. This applies to the United States and Canada, and very particularly to Japan, where this practice has led to most undesirable side-effects. See for more information *The International Study of University Admissions*, UNESCO, 1963.

[2] *Annuaire statistique de l'enseignement*, first published in 1956/1957 by the National Institute of Statistics and the National Ministry of Education, Brussels.

[3] This information is taken from the 1967 Review of Educational Policy for Italy soon to be published by OECD.

No attempt will be made to describe this complicated mosaic in detail; the following section will:

a) break down the mass of enrolment data into suitable sub-totals; i.e. corresponding to the main categories of schooling in the countries in question and which must be comparable to similar groupings in a number of other countries;

b) study the evolution of the enrolment structure over the past 15 years in terms of these sub-totals; for this, growth indices were calculated using 1955 as base year. Structural reforms may mean that some categories and sub-divisions which existed in 1950 were no longer valid in 1965, making comparisons over time impossible. For this reason, and because national educational statistics are often not broken down into the necessary subtitles, only a few countries could be compared. Comparisons of this type are of limited significance and may easily lead to misinterpretation. Only more profound qualitative analysis, which is essentially the task of comparative education research, could produce a more valuable and reliable comparison. The following breakdown does not replace this analysis; its only purpose is to make mass enrolment data more accessible and intelligible.

i) *General and technical-vocational enrolments*

Table 14, which summarises the data for systems where this breakdown is suitable and feasible, in principle lists general and technical-vocational enrolments to the extent that both types of education exist parallel to each other and cater for the same age-group.[1]

The increases in general secondary and technical-vocational enrolments are in line with the points made earlier: increases in secondary enrolments are common to all systems, but the rate of increase varies considerably. The lack of uniformity for enrolments in technical-vocational education is particularly striking: some countries show a decline (Germany), others, stability (Austria, England and Wales), while the remainder show increases, which are sometimes enormous. The relationship between the increases in the two types of system is by no means straightforward. Countries where general secondary enrolments increased faster—and sometimes much faster—than technical-vocational are found in the more developed group (Austria, Germany, the Netherlands, Norway, England and Wales) as well as in the less developed group (Spain and Turkey). Similarly, examples of the reverse trend (technical-vocational growing faster than general) are present in both groups (Belgium, Ireland, Sweden, Italy, Portugal and Yugoslavia). There seems to be no general pattern, except that expansion is common to all countries and to all types of secondary education. This does not mean that no explanation can be given for the growth pattern in every country. The vast expansion of technical-vocational enrolments

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[1] Except for Austria and Germany, where the general schools included in the table cater for pupils from age 10 or 11 to 17 or 18 (grades 5-13), the technical-vocational for pupils from age 14 or 15 to 17 or 18 (grades 9-13).

Technical: Berufsfach- and *Berufsaufbauschulen* (full-time secondary technical and vocational) and *Berufsschulen* (part-time vocational).

FINLAND:

General: Senior secondary school (three upper grades of secondary), junior secondary school (lower five grades of secondary), civic school (1 or 2 year school, depending on length of time spent in primary).
Technical: All vocational and technical.
Teacher training enrolments are not included in this Table.

ITALY:

General: Gimnasi and licei classici, licei scientifici.
Technical: Istituti tecnici, istituti professionali.
Teacher training and arts education not included in Table.

NETHERLANDS:

General: Voortgezet gewoon lager onderwijs (upper primary), *Uitgebreid lager onderwijs* (short general secondary, *Voorbereidend hoger en middelbaar onderwijs* (academic-type general secondary).
Technical: Including *Handelsavondscholen* (commercial evening courses), *Nautisch onderwijs* (nautical schools), *Technisch onderwijs* (technical schools) *Onderwijs voor meisjes* (special vocational schools for girls), *Overig onderwijs* (other types of technical/vocational education), *Land- en tuinbouwonderwijs* (agricultural and horticultural schools).

NORWAY:

General: People's further education schools are not included.
Technical: Includes all types of technical and vocational education at non-university level.

PORTUGAL:

General: Classical secondary schools.
Technical: Technical secondary schools.
Both groups defined as in the MRP Portugal Report.

SPAIN:

General: Enseñanza Media General.
Technical: All types of *Enseñanzas Tecnicas de Grado Medio*,
Enseñanza del Magisterio (teacher training) not included.

SWEDEN:

General: Middle school; girls' school; general, technical and commercial gymnasium.
Technical: Vocational schools (but only full-time courses of at least five months' duration).

UNITED KINGDOM (England and Wales):

General: Grammar schools and modern schools.
Technical: Technical schools.

TURKEY:

General: First and second cycle of general.
Technical: First cycle vocational, second cycle vocational and second cycle technical schools.
Not included: Health and agriculture schools.

YUGOSLAVIA:

General: General secondary (*gymnasium*), but excluding upper primary education.
Technical: Technical and vocational schools, schools for skilled workers.

TABLE 14. TOTAL ENROLMENTS IN GENERAL AND TECHNICAL-VOCATIONAL SECONDARY EDUCATION 1950-1965

ABSOLUTE NUMBERS AND GROWTH INDICES (1955 = 100)

	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBER	INDEX	ACTUAL NUMBERS	INDEX
Austria	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
General	65,569	78	84,582	100	88,922	105	92,158	117
Technical	110,456	58	189,070	100	177,590	94	189,393	100
Belgium	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
General	139,339	91	153,008	100	241,479	158	277,152	181
Technical	127,777	93	137,013	100	214,579	157	293,471	214
Germany	*1950*		*1956*		*1959*		*1965*	
General	892,874[2]	28[2]	3,243,455	100	3,261,771	101	3,612,716	111
Technical	1,787,402	74	2,424,882	100	1,984,468	82	1,959,037	81
Greece			*1955/56*		*1960/61*		*1963/64*	
General	n.d.	n.d.	209,802	100	273,390	130	313,574	149
Technical	n.d.	n.d.	n.d.	—	54,389	—	63,631	—
Ireland	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
General	73,225	85	85,949	100	109,721	128	141,440	165
Technical	n.d.	—	886	100	1,476	167	4,388	495
Finland	*1950*		*1955*		*1960*		*1965*	
General	140,455	77	181,919	100	281,462	155	342,202	188
Technical	31,394	74	42,318	100	59,977	142	81,522	193
Italy	*1951/52*		*1955/56*		*1960/61*		*1964/65*	
General	159,543	84	188,922	100	209,365	111	265,916	141
Technical	171,114	61	281,312	100	416,448	148	676,671	241
Netherlands	*1950*		*1955*		*1960*		*1964*	
General	236,034	74	316,880	100	480,298	152	517,234	163
Technical	330,378	82	400,881	100	542,120	135	576,457	144
Norway	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
General	38,319	78	49,102	100	92,470	188	106,918	218
Technical	46,452	90	51,544	100	50,950	99	72,816	141
Portugal	*1950/51*		*1955/56*		*1960/61*		*1964/65*	
General	48,485	70	68,873	100	111,821	162	135,000	196
Technical	35,423	72	49,439	100	101,000	204	147,500	298
Spain	*1950/51*		*1955/56*		*1960/61*		*1964/65*	
General	222,529	66	337,716	100	496,291	147	828,975	245
Technical	143,108	102	139,916	100	174,932	125	234,465	168
Sweden	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
General	154,537	85	181,478	100	232,024	128	201,816	111
Technical	14,286	74	19,377	100	49,426	255	71,362	368
United Kingdom (England and Wales)			*1955/56*		*1960/61*		*1964/65*	
General	n.d.	n.d.	1,762,629	100	2,310,760	131	2,366,624	134
Technical	n.d.	n.d.	87,366	100	101,913	117	88,501	101
Turkey	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
General	90,400	54	166,600	100	366,800	220	547,800	329
Technical	53,300	73	72,700	100	96,300	132	162,900	224
Yugoslavia (without upper primary)	*1952/53*		*1955/56*		*1960/61*		*1965/66*	
General	63,618	72	83,311	100	79,676	90	184,400[1]	209
Technical	144,485	94	152,909	100	247,328	162	400,400	262

1. Forecasts.
2. Figure for 1950 not comparable with those for later years.

GLOSSARY

AUSTRIA:

General: Allgemeinbildende höhere Schule (academic-type general secondary), *Musisch-pädagogisches Realgymnasium and* former *Lehrerbildungsanstalten* new type of general secondary school and, formerly, teacher training institute).

Technical: Mittlere und höhere technische, gewerbliche und kunstgewerbliche Schulen (technical and vocational schools), *Mittlere und höhere Schulen für wirtschaftliche Frauenberufe* (girls' domestic and household schools), *Lehranstalten für gehobene Sozialberufe und Fachschulen für Sozialarbeit* (social workers schools), *Handelsschulen und Handelsakademien* (trade schools), *2 jährige Büro- und Verwaltungsschule* (short commercial course), *Berufsschulen* (part-time vocational schools).

All *Sonderformen* (special types) are included.

Excluded are: Mittlere Anstalten der Lehrer- und Erzieherbildung (middle level teacher training), *Pädagogische und Berufspädagogische Akademien* (pedagogic academies); agricultural and horticultural schools which come under the Ministry of Agriculture, and schools which come under the Ministry of Social Affairs.

BELGIUM:

Data include general and technical enrolments in both the lower and the upper cycle of secondary education "degré inférieur" and "degré supérieur" of the "enseignement du deuxième niveau"). However, enrolments in the "4e degré primaire" (upper primary), the "formation des maîtres" (teacher training) and in the institutes of "formation artistique" are not included in the Table.

GERMANY:

General: Includes *Realschulen* (short general secondary), *Gymnasien, Oberstufe der Volksschule* (years 5-9 of primary), *Kollegs* (gymnasia for adults).

Technical: Berufsfach- und Berufsaufbauschulen (full-time secondary technical and vocational) and *Berufsschulen* (part-time vocational).

in Sweden,—from 19,400 in 1955 to 71,400 in 1965—for example, resulted from the strongly increased financial support of the State, based on the growing awareness of the economy's urgent need for more and better-trained technical personnel. The re-organisation of lower secondary schooling also affected these figures.

A further observation must be made about the evolution of technical education enrolments. In the former, traditionally, part-time enrolments have been extremely important, thus making the school system very complicated. Sometimes vocational schools are run by individual firms, sometimes by industries and sometimes by local authorities and/or the central government and in most countries all these arrangements co-exist. As no comprehensive data on these part-time enrolments are available, most of them have not been included in this comparison, which thereby loses much of its value. However, where information does exist, the part of full-time vocational training is shown to be increasing. For example, much of the fall in technical enrolments after 1955 in Germany is the result of a decline in part-time education: full-time enrolments remained almost constant. In Japan, part-time enrolments fell between 1955 and 1965 while full-time technical-vocational enrolments more than doubled. In the Netherlands, over the same time period, full-time enrolments increased twice as quickly as part-time. In Belgium, part-time enrolments increased by 33 per cent between 1952 and 1965, and full-time enrolments by 113 per cent. A detailed breakdown of enrolments in specific types of general and technical-vocational education would probably provide satisfactory explanations of the nature of the enrolment development in each type of course. The basis for comparing specific programmes in several countries is, however, very thin and makes, in fact, most comparisions of this type impossible. In the following paragraph a modest attempt is made to break down the group " technical-vocational " education into two sub-groups which have acquired an increasing significance in secondary professional training.

ii) " *Industrial* " *and* " *Non-industrial* "

In Table 15, the broad group " technical-vocational education " is broken down into two sub-groups: " industrial ", training for a technical or industrial skill in the *production sector* (mechanics, engineering, building) and " non-industrial ", training mainly for the *service sector* (commerce, hotel/restaurant, domestic skills, applied arts, medical and social work). The dividing-line between these groups is difficult to draw, and a more detailed analysis may lead to different groupings from those used here. It must also be stressed that the distinction drawn here is between types of educational programmes, and does not apply to the later occupation of these pupils, which may be very different from that for which they were trained. Nor has an attempt been made to analyse the curricula of each of the courses included in the two sub-headings to see whether they correspond to the training objective which their names seem to indicate.

In four of the six countries, " industrial " enrolments have increased faster than " non-industrial ", and in two, at the same rate. This result may possibly be influenced by the inclusion of three Mediterranean countries, where " industrial " training programmes still need to grow faster than " non-industrial ". It is also possible that the enrolments in the

" non-industrial " programmes listed here are not good indicators of their importance in secondary education. Their average length may be too different from that of the " industrial " programmes to allow comparisons to be made. If that is the case it would have been better to compare the number of certificated leavers. A more detailed study than can be undertaken in the framework of this report would be needed to group the enormous variety of technical-vocational programmes in categories which allow international comparisons.

iii) *" Academic " and " Non-academic " general secondary*

In many countries a significant distinction in secondary education exists between what might be called " academic " and " non-academic ". The former is intended as preparation for higher education, and is offered in the *gymnasium*, grammar school, or *lycée*. The latter, introduced in most countries during the industrialisation period when the need for large numbers of young people with a good level of general secondary training became urgent, prepares mainly for advanced technical and teacher-training education. In the Scandinavian countries this training used to be provided (and is partly still provided) by the *Realskola*, in Germany by the *Realschule*, in Austria by the *Hauptschule*, in France by the *Collège d'enseignement général*, and in the Netherlands, by the *MULO*.[1] But the number of countries where these two streams co-exist and are clearly distinct from each other is rapidly getting smaller as the various general syllabuses at lower secondary level become integrated into one course, or are co-ordinated to such an extent that objectives are no longer distinct.

Table 16 shows the increases in the two types of education for six countries. The expansion in non academic education has clearly been more rapid in France, but only slightly more rapid in Germany; in England and Wales expansion has been more or less parallel; in the Netherlands the " academic " is now gaining, and in Austria and Finland has always been more rapid. In all these countries, however, any difference between the two syllabuses is rapidly disappearing, transfers between the two programmes become more and more frequent and, as a consequence, it will soon be impossible to draw a line within secondary enrolments between those who are preparing for higher education and those who are not.

iv) *Humanities and science*

The streaming of pupils in the " academic " secondary schools is very important, especially in the upper cycle into the broad division of humanities (language, classical studies, social studies, etc.) and sciences. The poor interest of pupils in science courses in " academic " general secondary education has in the recent past been a matter of serious concern in many OECD Member countries. Table 17, which gives an index of enrolment increases for five countries, shows how varied development in the OECD area has been. In one country (Austria) the humanities have increased faster than science ; in three, science has increased much faster than the humanities (Belgium, Italy, Switzerland) and in one (Turkey) slightly faster.

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[1] After the recent " Mammoth Law " reform, the " MULO " school changed its name to " MAVO " school.

TABLE 15. INDUSTRIAL AND NON-INDUSTRIAL SECONDARY EDUCATION
(1955 = 100)

	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX
Austria	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Industrial	8,652	64	13,563	100	16,469	121	17,589	130
Non-Industrial	15,479	54	28,549	100	27,366	96	26,664	93
Belgium	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
Industrial	6,618	72	9,166	100	14,958	163	24,291	265
Non-Industrial	18,089	96	18,855	100	22,323	118	39,812	211
Italy	*1951/52*		*1955/56*		*1959/60*		*1964/65*	
Industrial	81,206	75	108,534	100	180,042	166	390,348	360
Non-Industrial	89,930	70	127,674	100	205,465	161	279,865	219
Japan			*1956*		*1960/61*		*1965/66*	
Industrial	n.d.	—	464,354	100	554,415	119	909,190	195
Non-Industrial	n.d.	—	620,773	100	784,710	126	1,134,423	183
Spain	*1950/51*		*1955/56*		*1960/61*		*1964/65*	
Industrial	30,599	83	36,994	100	103,321	279	170,903	462
Non-Industrial	87,389	116	75,539	100	38,509	51	36,255	48
Yugoslavia	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
Industrial	n.d.	—	20,677	100	50,281	243	104,374	505
Non-Industrial	n.d.	—	21,265	100	57,742	272	106,059	499

GLOSSARY

AUSTRIA:

Industrial includes: *Mittlere und höhere technische, gewerbliche und kunstgewerbliche Schulen* (secondary technical and vocational schools).

Non-industrial: Mittlere und höhere Schulen für wirtschäftliche Frauenberufe (girls' domestic and household schools), *Mittlere und höhere Schulen für Sozialarbeit* (social workers' schools), *Handelsschulen und Handelsakademien* (trade schools), *2 jährige Büro- und Verwaltungsschule* (short commercial course). *Berufsschulen* (part-time vocational schools) are not included.

Belgium:

Industrial: Degré supérieur du secondaire : mines et pierres, métaux, électricité, chimie-alimentation, bois, textile, horlogerie et fine mécanique, impression, construction, transport, agronomie, précision enseignement technique militaire.

Non-industrial: Degré supérieur du secondaire : vêtements, arts appliqués, commerce et organisation, services des personnes, sections générales et préparatoires, enseignement spécial (pour inadaptés physiques, mentaux ou sociaux).

Italy:

Industrial: For both the *istituti professionali* and *istituti tecnici* the following specialisations: *agrari, industriali, nautici, per geometri, scuole tecniche agrarie e industriale.*

Non-industrial: For both the *istituti professionali* and the *istituti tecnici* the following specialisations: *commerciali, femminile, per il turismo;* furthermore the *cuole tecniche commerciale.*

Japan:

Industrial: Agricultural, fishery and technical secondary schools.

Non-industrial: Commercial, domestic, arts and " other " secondary technical schools.

Spain:

Industrial: Enseñanza Profesional Industrial, Enseñanza Tecnica de Grado Medio (but the latter excluding *Tecnicos Sanitarios*).

Non-industrial: Enseñanza de Comercio, Tecnicos de Sanitarios, Artes Aplicadas y Oficios Artisticos.

Yugoslavia:

Industrial: Mechanical engineering, electrical engineering, civil engineering schools; technological schools, other technical schools, agricultural, forestry and veterinary schools.

Non-industrial secondary schools: Secretarial schools, medical schools.

Table 16. ACADEMIC AND NON-ACADEMIC SECONDARY EDUCATION
(1955 = 100)

	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX
Austria	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Academic	64,721	78	83,314	100	86,441	104	95,680	115
Non-academic	387,398	115	337,198	100	332,538	99	309,613	92
France	*1950*		*1954/55*		*1959/60*		*1964/65*	
Academic	714,600	116	616,100	100	951,000	154	1,503,400	244
Non-academic	279,240	88	316,439	100	547,615	173	965,400	305
Finland	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
Academic	15,020	80	18,756	100	32,581	174	54,875	293
Non-academic	125,435	77	163,163	100	248,881	153	287,327	176
Germany	*1950*		*1956*		*1959*		*1965*	
Academic	657,070	78	845,205	100	861,366	102	961,348	114
Non-academic	235,804	55	428,651	100	423,235	99	539,284	126
Netherlands	*1950/51*		*1955/56*		*1960/61*		*1964/65*	
Academic	83,310	77	108,845	100	170,253	156	202,170	186
Non-academic	152,724	73	208,035	100	310,045	149	315,064	151
United Kingdom (England and Wales)			*1955/56*		*1960/61*		*1964/65*	
Academic	n.d.	—	528,455	100	672,881	127	726,075	137
Non-academic	n.d.	—	1,234,174	100	1,637,879	133	1,640,549	133

GLOSSARY

AUSTRIA:

Academic: Allgemeinbildende höhere Schulen (academic general secondary), grades 1-8 excl. *Sonderformen* (special types), but including *Musisch-pädagogische Realgymnasia* (new type of 5-year general secondary schools, leading to the *Matura*).

Non-academic: Hauptschule (short general secondary school), grades 5-8 *Volksschule* (primary school), grades 5-8 *Sonderschule* (special education).

France:

Academic: Lycées (academic-type general secondary).

Non-academic: Collèges d'enseignement général (short general secondary), *cours complémentaires* (upper primary, terminal classes), ***enseignement moderne court des lycées*** (special short programme in *lycées* but, for the latter, data for 1964/55 are not available and for 1959/60 and 1964/65 in *sections spécialisées des cours complémentaires* in private schools).

Finland:

Academic: Senior secondary schools (three top grades of the secondary school).

Non-academic: Junior secondary school (five bottom grades of secondary school), civic school (one or two years, depending on length of time spent in elementary).

Germany:

Academic: Gymnasium and *Kolleg* (academic-type general secondary, leading to *Abitur*, which qualifies for university entrance).

Non-academic: Realschule (shorter, parallel type of general secondary school).

Netherlands:

Academic: Voorbereidend hoger en middelbaar onderwijs (long, academic-tyûe general secondary).

Non-academic: Uitgebreid lager onderwijs (shorter general secondary programme) and *Voortgezet gewoon lager onderwijs* (terminal, upper primary education).

United Kingdom:

Academic: Grammar schools (full-time only),

Non-academic: Modern schools (full-time only).

TABLE 17. HUMANITIES AND SCIENCE STREAMS IN "ACADEMIC" GENERAL SECONDARY EDUCATION
(1955 = 100)

	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX
Austria	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Humanities	11,735	77	15,295	100	15,112	99	16,870	110
Sciences	46,233	77	59,670	100	61,364	103	35,498	59
Belgium	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
Humanities	16,435	87	18,968	100	21,214	112	27,572	145
Sciences	10,335	85	12,088	100	21,790	180	34,641	287
Italy	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Humanities	120,067	84	142,451	100	147,243	103	182,742	128
Sciences	39,467	85	46,471	100	62,122	134	104,213	224
Turkey			*1955/56*		*1960/61*		*1961/62*	
Humanities	n.d.	—	4,041	100	17,195	426	21,155	524
Sciences	n.d.	—	2,377	100	13,807	581	16,076	676
Switzerland	*1951/52*		*1956/57*		*1960/61*		*1961/62*	
Humanities	7,997	70	11,353	100	12,573	111	16,759	148
Sciences	2,662	90	2,966	100	4,184	141	6,251	211

GLOSSARY

AUSTRIA:

Humanities: Gymnasium, all grades.

Science: Realgymnasium and *Realschule* (science-oriented *gymnasium* and modern language-type general secondary).

Not included in Table: Frauenoberschule (girls' general secondary school, now called *Wirtschaftskundliches Realgymnasium*), *Musisch-pädagogisches Realgymnasium* (new type, of 5-years' duration) and all *Sonderformen* (special types of *gymnasium*).

BELGIUM:

Humanities: Latin-Grec stream of the *formation générale* of the upper cycle of secondary.

Science: Streams *Latin-Mathématiques*, *Latin-Sciences*, *scientifique*, *scientifique B*, *classes de soir spéciales*, the *formation générale* of upper secondary.

ITALY:

Humanities: Liceo classico e gimnasio.
Science: Liceo scientifico.

SWITZERLAND:

Humanities: Classiques streams in upper general secondary schools
Science: Science streams in upper general secondary schools.

TURKEY:

Humanities: Litterature streams in *lycée.*
Science: Science streams in *lycée.*
Data for 1955/56 for both are incomplete.

In five of the six countries listed in Tables 18 and 19, by 1955 secondary certificate holders were already fairly evenly divided between the humanities and science streams. Up to 1965, in these countries, the increase in the number of graduates in both streams was then roughly the same. The sixth country, Belgium, is a noticeable exception: in 1955 only one-third of the graduates were in the science stream, in 1965 more than half, due to a much stronger growth than that of the humanities stream.

TABLE 18. BELGIUM, NORWAY : HUMANITIES AND SCIENCE CERTIFICATE HOLDERS

COUNTRY		1955/56	1960/61	1963/64
Belgium	Humanities	5,320	6,145	7,739
	Science	2,827	4,638	8,857
Norway	Humanities	1,912	2,457	5,233
	Science	1,834	2,722	5,498

TABLE 19. EXPANSION IN HUMANITIES COMPARED WITH SCIENCE CERTIFICATE HOLDERS FROM ACADEMIC SECONDARY EDUCATION (1955 = 100)

COUNTRY		1950	1955	1960	1965	NUMBER OF CERTIFICATE HOLDERS IN 1955
Netherlands	Humanities	96	100	134	199	3,782
	Sciences	110	100	112	200	4,836
Sweden	Humanities	64	100	182	234	3,516
	Sciences	61	100	123	232	3,962
Denmark	Humanities	75	100	116	237	1,584
	Sciences	93	100	170	333	1,562
France	Humanities	n.d.	100	132.2	267.9[1]	17,666
	Sciences	n.d.	100	163	268	19,944

[1] 1966.

In all countries science graduates were in 1965 at least as numerous as those in humanities. The data contained in Table 19 confirm those of Table 17: enrolments in science streams have increased faster than in the humanities and in 8 of the 11 countries for which data are listed, the number of certificated leavers from the science streams is greater than that from the humanities; this, in spite of the often-heard statement that the appeal of science in secondary schools has diminished.

The factors contributing to this development should be examined in more detail for Sweden as an illustration of the problems arising in a report of this type. Sweden's system of upper secondary education (*gymnasium*) has recently been changed, but for the period under consideration there were three main types of *gymnasium*:—the general, the commercial, and the technical. A percentage breakdown (1950-1962) is given in Table 20.

TABLE 20. SWEDEN : PERCENTAGE BREAKDOWN OF ENTRANTS BY TYPE OF GYMNASIUM

YEAR	GENERAL	COMMERCIAL	TECHNICAL	TOTAL	17 YEAR OLDS ENTERING
1950	78.1	10.0	11.9	100	10.7
1955	81.6	9.6	8.8	100	14.1
1960	81.8	7.1	11.1	100	19.5
1962	75.2	10.7	14.1	100	23.2

During the period under review the percentage of the age-group entering the gymnasium type of education more than doubled (see the final column of Table 20). The general proportions changed little, but actual percentages varied: that of entrants to the commercial *gymnasium* fell each year until 1960, although the numbers increased from 859 in 1950 to 1,698 in 1960, after which both absolute numbers and the percentage of entrants increased rapidly. Over the same period admissions to the technological *gymnasium* reacted similarly, but at a different rate: the numbers increased all the time, but the proportion fell until 1956 and then increased. An understanding of the evolution of the Swedish system requires a knowledge of the trends in the size of the age-group, the proportion entering upper secondary education, and the breakdown by type of study. In comparatively short periods important, and not always consistent, changes took place in the numbers and breakdown of students. More recent figures show that by 1965 the percentage in technological *gymnasia* had increased to 15.5 per cent and fallen to below 70 per cent in the general *gymnasia*. Admission in 1966 to technological *gymnasia* increased to 22.7 per cent of all entrants as a result of planning efforts and the re-organisation of the *gymnasium* in that year. A complete picture of the system demands even more detailed analysis: the general *gymnasium* is made up of three main streams and the percentage breakdown in Table 21 shows the changes which have taken place since 1955.

TABLE 21. SWEDEN: PERCENTAGE BREAKDOWN BY STREAM OF PUPILS IN GENERAL GYMNASIUM

YEAR	MODERN	CLASSICAL	SCIENCE	TOTAL
1955	20.6	34.4	45.0	10,508
1960	20.8	26.0	53.2	19,487
1962	21.5	24.6	53.9	22,382

Table 22. LOWER AND UPPER SECONDARY ENROLMENT; DEVELOPMENT FROM 1950 TO 1965 AND GROWTH INDICES

(1955 = 100)

	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX	ACTUAL NUMBERS	INDEX
Austria	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Lower secondary	434,276	111	391,317	100	383,301	98	364,307	93
Upper secondary	128,993	58	220,526	100	217,060	113	236,341	124
of which: part-time education	86,325	58	146,958	100	133,755	98	145,140	107
Belgium	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
Lower secondary	303,358	98	308,311	100	413,544	134	448,116	145
Upper secondary	58,537	71	82,552	100	113,188	137	172,359	209
Italy	*1951/52*		*1955/56*		*1960/61*		*1965/66*	
Lower secondary	795,720	89	905,768	100	1,414,177	156	1,790,790	198
Upper secondary	412,349	70	585,379	100	746,044	127	1,223,688	209
Ireland	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
Lower secondary	61,301	87	70,901	100	89,789	127	113,368	160
Upper secondary	11,924	75	15,934	100	21,408	134	32,460	204
Japan	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
Lower secondary	5,332,515	91	5,883,692	100	5,899,973	100	5,956,630	101
Upper secondary, incl. part-time	1,935,118	75	2,592,001	100	3,225,945	124	5,065,657	195
Part-time education only	n.d.		n.d.		515,830	—	511,898	—
Turkey	*1950/51*		*1955/56*		*1960/61*		*1965/66*	
Lower secondary	68,200	51	133,200	100	337,300	253	509,200	382
Upper secondary	75,500	71	106,100	100	125,800	119	201,500	190
Unites States	*1950*		*1956*		*1960*		*1965/66*	
Lower secondary (= 7-9 grade)	5,442,000	77	7,042,000	100	8,286,000	118	n.d.	—
Upper secondary (= 10-12 grade)	3,922,000	83	4,718.000	100	6,068,000	129	n.d.	—
Yugoslavia	*1952/53*		*1955/56*		*1960/61*		*1964/65*	
Lower secondary	278,966	76	367,300	100	1,060,227	289	1,328,811	362
Upper secondary	234,237	88	265,318	100	350,147	132	566,346	213

GLOSSARY

AUSTRIA:

Lower secondary includes: Grade 5-8 *Volksschule* (primary); Grades 5-8 *Sonderschule* (special education); Grade 1-4 *Hauptschule* (short general secondary); Grade 1-4 *Mittelschule* or *allgemeinbildende höhere Schule* (" academic " general secondary).

Upper secondary includes: Grades 1-4 *Berufsschule* (part-time vocational); Grade 5-8 *Mittelschule* or *allgemeinbildende höhere Schule;* Grades 1-5 *Musisch-pädagogisches Realgymnasium* or *Lehrerbildungsanstalten* (new type of " academic " general secondary schools), *Mittlere Anstalten der Lehrer und Erzieherbildung* (teacher training), *mittlere und höhere technische, gewerbliche und kunstgewerbliche Schulen* (technical and vocational), *Mittlere und höhere Anstalten für wirtschaftliche Frauenberufe* (girls' domestic and household schools), *Lehranstalten für gehobene Sozialberufe und Fachschulen für Sozialarbeit* (social work), *Handelsschulen und Handelsakademien* (trade schools), *2 jährige Büro- und Verwaltungsschule* (short commercial course).

As from 1966/67 the new *Polytechnischer Lehrgang* (polytechnic course) should be included in upper secondary enrolments.

BELGIUM:

Lower Secondary includes: *Degré inférieur de l'enseignement secondaire.*

Upper Secondary: Degré supérieur de l'enseignement secondaire.

Both categories as defined in the *Annuaire Statistique de l'Enseignement* for Belgium.

ITALY:

Lower Secondary: Scuola media (middle school); (before 1962: *scuola media* and *scuola di avviamento professionale*).

Upper Secondary: Istruzione media superiore (upper secondary education, including *scuole e istituti di qualificazione professionale, istituti tecnici e magistrali, licei scientifici e licei classici*).

IRELAND:

Lower Secondary: Includes Second Level, Junior Cycle (secondary, vocational (continuation), comprehensive).

Upper Secondary: Second Level, Senior Cycle (secondary, vocational (technical), other aided schools and non-aided schools).

JAPAN:

Lower Secondary: Lower secondary schools }
Upper Secondary: Upper secondary schools } Definitions as in national statistics on education.

TURKEY:

Lower Secondary: First cycle general, first cycle vocational (the latter as from 1960).

Upper Secondary: Second cycle general, second cycle vocational and second cycle technical (the latter as from 1960); before that year included in secondary vocational).

Data from Social Planning Department, State Planning Organization.

UNITED STATES:

Lower Secondary: Grades 7-9 of the high school.

Upper Secondary: Grades 10-12 of the high school.

YUGOSLAVIA:

Lower Secondary: Grades 5-8 of the 8-year primary school.

Upper Secondary: Gymnasium, technical schools, schools for skilled workers.

v) *Lower and upper secondary enrolment*

It has already been mentioned earlier in this report that in particular at the lower secondary level the differences between general and technical-vocational education and between " academic " and " non-academic " have become progressively more vague as secondary education syllabuses have become more integrated, and as compulsory schooling has often been extended to 8 or 9 years. It was pointed out that in an increasing number of countries a clear distinction between lower and upper secondary education is being established.

Table 22 shows lower and upper secondary enrolments for eight countries. In three (Belgium, Ireland and Japan) enrolments in upper secondary school have increased considerably faster since 1955 than those in the lower, and in three others (Austria, Italy, the United States) only slightly faster. In two (Turkey and Yugoslavia), lower secondary increased much faster than upper. Although these data concern a limited number of countries, they are significant. In the two Mediterranean countries great efforts have been made to expand lower secondary education and/or to implement compulsory schooling legislation. In Yugoslavia this process is now almost achieved; in Turkey enrolments at this level will still show very high growth rates for several decades. In Belgium, Ireland and Japan full enrolment at lower secondary level had already been achieved by 1955, so that expansion could and mainly did take place at the upper secondary level. In the United States, upper secondary education continued to expand, but the demographic factor is the main determinant of enrolment development at both levels. In Italy both levels showed strong growth but, whereas the increase at the lower level has now reached a peak at which only demographic factors can still influence it, that at the upper level can still continue for a long time. Finally, in Austria, lower secondary enrolment, running parallel with the compulsory schooling period, followed the fluctuations of the size of the age-group; at the upper secondary level, however, the effects of a fairly increased participation were after 1955 neutralized by the strong decrease in the size of the age-group.

These observations confirm what has been said earlier in this report concerning the differing importance of demographic factors and changing participation rates at the lower and the upper secondary levels: In the developed countries the demographic factor has become the main, or even the only, determinant in lower secondary enrolments, and in the most developed is also becoming the main factor which determines upper secondary enrolments. In the less-developed countries the participation factor is still the principal determinant of enrolments at both lower and upper secondary levels.

II. EFFICIENCY, WASTAGE, FAILURES AND DROP-OUTS

The problem of the " efficiency " of secondary education may be considered in terms of both the system's adequacy in achieving its social and economic objectives (quantitative and qualitative), and of its " internal efficiency " in using its resources to achieve these objectives.[1] This report will concentrate on the second aspect of the problem, since the first would require a more profound knowledge of the relationships between the qualification offered by education and professional categories than we have at present at our disposal. It would, furthermore, necessitate a study of the " utilisation " of secondary graduates in the countries' economies.

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[1] See for a discussion of this concept the report, *Education, Human Resources and Development in Argentina*, OECD, 1967, pp. 25-27.

One indication of an educational system's internal efficiency is the number of certificated leavers compared with that of corresponding entrants. Cohort-studies of a group of first entrants through the educational cycle are one of the best methods of getting this information, but are available for only a very few secondary school systems. For most countries, data are available for repeaters, or rates of promotion from one grade to the next, or drop-outs, or examination pass rates, but rarely for all of them. The total effect of these various " wastage " factors can be measured by comparing the number of secondary certificated leavers with that of first entrants " x " years before (i.e. the number of years formally required to complete the course). A comparison of the enrolments by grade for each year with those in the next higher grade the following year provides an indication of the precise moment at which drop-outs occur.

Conclusions drawn from this type of information require careful examination: most secondary education systems are far more complex than those of primary or even higher education. Drop-out is not identical with failure, or repetition with wastage. The definition of a school system's efficiency or inefficiency depends on its criteria for admission, promotion and assessment and, in the final analysis, on its educational philosophy. The meaning of repeater, drop-out, pass or failure rates differs so widely from one school system to another that, as between OECD Member countries, comparisons over time within one system are more useful than inter-country or inter-system comparisons. It would, for example, be significant if the repeater or drop-out rates in a country's secondary education were found to increase with the number of enrolments, or with a rising enrolment ratio. Such findings (or the opposite) would be very useful when considering the effect of quantitative growth on the efficiency and quality of secondary education.

A distinction should be made between what we should like to call " linear " and " branching " types of secondary education: in the " linear ", pupils normally follow the course until passing the final examination and are considered as failures if they leave before doing so. Intermediate examinations are mainly to qualify pupils for the next grade and have no terminal or external value (i.e. qualifying for other types of schools). In the " branching " type, each stage is independent with a recognized terminal examination and/or certificate qualifying for admission to the next stage or to other types of education. " Pure " types do not exist, but the distinction is useful in discussion on drop-out and wastage in school systems. The *gymnasium* or *lyceum* in most European countries is an example of the " linear " type; and the comprehensive type of junior high school in the Scandinavian countries, or the first stage of the *gymnasium* in some Mediterranean countries, of the " branching " type. In the latter, pupils who complete the first stage may either go on to the upper grades of the gymnasium or transfer to another type of education. The less brilliant pupils who adopt this course cannot be considered as failures or drop-outs. A truly comprehensive system is in this respect an improved version of the " branching " type: pupils would be able to " branch " within the system, so that failure, wastage and even drop-out would no longer apply.[1]

Table 23 gives approximate pass rates for secondary education in a number of OECD countries. Most of the secondary systems listed are typically " linear ": students will normally intend to reach the final certificate. Those who abandon the course can be considered as drop-outs in the strict sense of the word. Unfortunately, there is no simple way of interpreting the data in this table. In some cases the pass rates in general education are much higher than those in the corresponding technical course (Turkey, Spain); in some the pass rates seem particularly high (upper secondary school in Japan); and, in others, particularly low (last three years of *lycée* in France, general secondary school in Yugoslavia).

Two preliminary conslusions can be drawn from these data:

a) in most secondary school systems an important percentage of first entrants does not obtain the leaving certificate and many leave the programme in its first grades. Obviously, these drop-out rates imply higher wastage of resources and talent if they apply to the final year(s) than to the first;

b) in several countries the pass rate has improved in spite of the increase in enrolments, but not in upper secondary technical education in Italy and Yugoslavia. The many unknown variables and incomparable factors (the different nature, objectives and duration of the courses) reduce the value of this type of comparative analysis, however. Since the repeating of grades is not a complete waste of time and resources and drop-out not necessarily total failure—for, the benefit of education is fortunately not restricted to the final certificate—the value of the following data on pass and failure rates, drop-out and retention, for evaluating secondary school systems is therefore relatively limited.

A *Dutch* cohort study, one of the few available for secondary education, is summarised in Tables 24 to 27. Tables 24 and 25 show that, in ULO and VHMO general secondary schools, approximately 50 per cent of the cohort of first-year entrants passed the final examination. Of this 50 per cent, in ULO two-thirds passed the final examination in the normal time and one-third took longer; in VHMO fewer than half passed in the normal time. Of those who left without a certificate, nearly two-thirds in ULO, and about two-fifths in VHMO did so without having repeated one or more grades. Of the total cohort, in ULO only a third, and in VHMO a quarter passed in the normal time.[2] Compared with these, the results of the four-year full-time " higher technical schools " shown in Table 25

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[1] The above definition does not include " failure " or " wastage " in the more subtle sense of under-utilisation of a student's capacities. A comprehensive system may reduce the first source of wastage, which consists in high repeater and drop-out rates, and which is typical of selective school systems. As a consequence, it will have a high " productivity " (defined as the number of certificated leavers compared with that of new entrants) but low " quality " (defined as the academic or performance level of its " products "). The traditional selective secondary school systems sacrifice productivity to quality, by eliminating all bad risks. The comprehensive-type systems may risk sacrificing quality to productivity.

[2] The ULO course varies between 3 and 4 years, and that of the VHMO between 5 and 6. The " wastage " in ULO is more serious than in the lower grades of VHMO schools from which it is easier for pupils to transfer (after 3 years)to other types of further education.

TABLE 23. APPROXIMATE PASS RATES IN SECONDARY EDUCATION FOR SELECTED OECD COUNTRIES

GENERAL EDUCATION

COUNTRY	TYPE OF SCHOOL AND DURATION OF COURSE	FIRST YEAR ADMISSIONS		LEAVERS WHO PASS FINAL EXAM		LEAVERS WHO PASS FINAL EXAM % OF ENTRANTS
		YEAR	NUMBER	YEAR	NUMBER	
Belgium	Upper secondary (general)[1]: 3 years	1953-54	15,993*	1955-56	9,813	*61.6*
		1958-59	18,[illegible]12*	1960-61	13,381	*71.5*
		1961-62	27,201*	1963-64	20,834	*76.6*
Netherlands	ULO 3-4 years	1950	41,602	1953	20,003	*48.1*
		1955	57,485	1958	24,997	*43.5*
		1961	79,747	1964	42,590	*53.4*
	VHMO: 5-6 years	1950	15,880	1955	9,938	*62.6*
		1955	25,188	1960	13,862	*55.0*
		1959	37,903	1964	21.233	56.0
France	Upper secondary (general)[2]: 3 years	1959-60	120,339*[4]	1961-62	62,914[3]	*52.3*
		1960-61	130,540*	1962-63	70,644	*54.1*
		1963-64	194,261*	1965-66	100,758	*51.9*
Spain[8]	General *superior:* 2 years	1961-62	30,600*	1962-63	26,500	*86.6*
		1966-67	64,000*	1967-68	61,500	*96.0*
		1969-70	108,900*	1970-71	104,700	*96.1*
	Pre-university course: 1 year	1966-67	27,900*	1966-67	27,200	*97.5*
		1967-68	35,900*	1967-68	35,000	*97.5*
		1968-69	42,500*	1968-69	41,400	*97.4*
		1971-72	58,700*	1971-72	57,200	*97.4*
Italy	*Scuola media:* 3 years	1951-52	363,740*	1953-54	211,513	*58.1*
		1959-60	581,244*	1961-62	396,021	*68.1*
		1962-63	671,886*	1964-65	440,451	*65.6*
	Liceo classico and *scientifico:* 5 years	1951-52	39,771*	1955-56	25,670	*64.5*
		1955-56	46,920*	1959-60	32,017	*68.4*
		1956-57	46,173*	1960-61	31,948	*69.2*
Yugoslavia	*Gymnsaia:* 4 years	1952-53	24,780*	1955-56	12,902	*52.1*
		1957-58	23,904	1960-61	14,635	*61.2*
		1960-61	27,570	1963-64	14,842	*53.8*
Japan	Senior High School: 3 years	1950-51	722,441*	1952-53	680,191	*94.2*
		1954-55	836,213*	1956-57	776,753	*92.9*
		1955-56	891,395*	1957-58	854,377	*95.8*
		1960-61	1,066,557*	1962-63	1,016,181	*95.3*
	Junior High School: 3 years	1955-56	2,011,615*	1957-58	1,974,872	*98.2*
		1959-60	2,519,003*	1961-62	2,491,231	*98.9*
		1960-61	2,451,367*	1962-63	2,426,802	*99.0*
Turkey[8]	*Lycée* : 3 years	1963-64	33,400	1965-66	26,700	*79.9*
		1964-65	50,100*	1966-67	26,900	*53.7*
		1968-69 (estimated)	69,100*	1970-71	48,500	*70.2*
Germany	*Realschule:* 6 years	1950	54,438[5]	1956	64,076[6]	*117.7*
		1953	79,894*	1959	71,696	*89.7*
		1956	70,129*	1962	54,703	*78.0*
		1959	80,493*	1965	68,297	*84.8*
	Gymnasium: 9 years	1950	127,212*	1958	46,615	*36.6*
		1953	140,229*	1961	58,028	*41.4*
		1956	98,918*[7]	1964	56,773	*57.4*
		1959	126,310*	1967	65,080	*51.5*

SECONDARY TECHNICAL EDUCATION

COUNTRY	TYPE OF SCHOOL AND DURATION OF COURSE	FIRST YEAR ADMISSIONS		LEAVERS WHO PASS FINAL EXAM		LEAVERS WHO PASS FINAL EXAM % OF ENTRANTS
		YEAR	NUMBER	YEAR	NUMBER	
Italy	Technical Institutes: 5 years	1951-52	36,329*	1955-56	25,908	*71.3*
		1955-56	64,268	1959-60	44,369	*69.0*
		1961-62	106,776*	1964-65	61,349	*57.5*
Yugoslavia	Technical School : 4 years	1952-53	6,565*	1955-56	5,037	*76.7*
		1957-58	25,574*	1960-61	17,215	*67.3*
		1960-61	41,477*	1963-64	24,589	*59.3*
Spain[8]	Technical Secondary Education: 3-year curriculum.	1965-66	10,900*	1967-68	7,000	*64.2*
		1966-67	12,200*	1968-69	9,500	*77.9*
		1968-69	18,900*	1970-71	14,500	*76.7*
	4-year curriculum	1965-66	11,800*	1968-69	7,800	*66.1*
		1966-67	12,300*	1969-70	8,500	*69.1*
		1967-68	14,100*	1970-71	9,500	*67.4*

		1956	70,129*	1962	54,703	*78.0*
		1959	80,493*	1965	68,297	*84.8*
	Gymnasium: 9 years	1950	127,212*	1958	46,615	*36.6*
		1953	140,229*	1961	58,028	*41.4*
		1956	98,918*[7]	1964	56,773	*57.4*
		1959	126,310*	1967	65,080	*51.5*

SECONDARY TECHNICAL EDUCATION

Italy	Technical Institutes: 5 years	1951-52	36,329*	1955-56	25,908	*71.3*
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		1968-69	18,900*	1970-71	14,500	*76.7*
	4-year curriculum	1965-66	11,800*	1968-69	7,800	*66.1*
		1966-67	12,300*	1969-70	8,500	*69.1*
		1967-68	14,100*	1970-71	9,500	*67.4*
Turkey[8]	Technical School: 3 years	1963-64	9,800*	1965-66	4,100	*41.8*
		1964-65	13,800*	1966-67	5,300	*38.4*
		1968-69 (estimated)	17,300*	1970-71	12,300	*71.1*

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1. ***Année scientifique spéciale*** **is not included.**
2. **Are included in first year enrolment:** ***Lycées classiques et*** *modernes* and the *sections classiques* and *modernes* of ***Lycées techniques*** **and first year students** in ***écoles normales.***
3. **Some pupils with private institution included.**
4. **First year enrolment for 1959-60 inflated.**
5. **Excluding Hamburg and Berlin.**
6. **Including Hamburg and Berlin.**
7. **Excluding Berlin public schools.**
8. **Forecasts from MRP Reports.**

* = First year enrolments including repeaters.

TABLE 24. NETHERLANDS: SCHOOL RESULTS IN SECONDARY EDUCATION

In percentage.

	ULO COHORT ADMITTED IN 1954			VHMO COHORT ADMITTED IN 1954		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
Total School Leavers	100	100	100	100	100	100
a) *With certificate*	50	47	53	53	52	53
of which:						
No repeated classes	33	28	38	24	21	27
Repeated classes	17	19	14	29	31	26
b) *Without certificate*	50	53	47	47	47	46
of which:						
no repeated classes	31	31	30	19	18	22
repeated class(es)	20	22	18	29	30	25
of which: Grade 1	22	26	17	—	—	—
of which: Grade 2 +	29	28	31	—	—	—

Source: De Ontwikkeling van het Onderwijs in Nederland, The Hague, 1966. Figures for the ULO are taken from table 100 and those for the VHMO from table 124.

TABLE 25. NETHERLANDS: SCHOOL RESULTS IN FULL-TIME TECHNICAL SECONDARY SCHOOLS

(Upper secondary level, *Hogere Technische Dagscholen*)[1]

	OF THOSE ADMITTED TO 1st GRADE					OF THOSE ADMITTED TO 2nd GRADE				
	TOTAL	B[2]	WW[2]	W[2]	E[2]	TOTAL	B[2]	WW[2]	W[2]	E[2]
Total leavers	100	100	100	100	100	100	100	100	100	100
With certificate	71	72	80	69	72	88	87	91	89	83
No repeated classes	47	49	51	44	50	73	70	63	73	69
With repeated classes	24	23	29	24	22	15	17	8	16	14
Without certificate	29	28	20	32	29	11	12	9	11	17
No repeated classes	20	19	12	22	21	10	11	8	9	14
of which:										
From grade I	16	15	9	18	18	—	—	—	—	—
II	2	2	2	2	1	8	8	7	6	10
III	1	1	1	1	1	2	3	1	2	3
IV	0	1	0	1	0	0	—	—	0	1
With repeated classes	9	9	8	10	8	1	1	1	2	3
of which:										
From grade I	4	6	4	4	3	—	—	—	—	—
II	2	1	2	3	2	1	—	1	0	1
III	1	1	1	1	1	0	—	—	0	—
IV	2	1	1	3	1	1	1	1	1	2

1. *De Ontwikkeling van het Onderwijs in Nederland*, The Hague, 1966.
2. B = Construction; WW = Civil engineering; W = Mechanical engineering; E = Electrical engineering.

are much better. The pass rate for those admitted to the first grade is 71 per cent, although this varies according to specialisation. The proportion of terminal passes in the normal time is about the same as in ULO —roughly two-thirds. In ULO, the pass rate for females is higher than for males, and in both ULO and VHMO the " no repeated class(es) " pass rate for girls is considerably higher than for boys—38 per cent against 28 per cent, and 27 per cent against 21 per cent, respectively. Table 26 (destination of uncertificated school leavers) suggests that these are not necessarily drop-outs from the school system: 62 per cent and 61 per cent for boys and 36 per cent and 34 per cent for girls went on to other types of education in 1956 and 1960 respectively from ULO schools, and 74 per cent and 68 per cent (boys) and 59 per cent and 56 per cent (girls) from VHMO. If this information is applied to Table 24, it means that for ULO, of first-year entrants for 1954, 20 per cent of the boys and 30 per cent of the girls left school without a certificate and without going to another type of school, and for VHMO 14 per cent of the boys and 20 per cent of the girls. These figures therefore represent the " drop-outs " from the educational system.

The percentage of pupils not promoted to the next grade at the end of the school year, (Table 27), is in some ways a more serious problem and a greater source of wastage than actual drop-out. The table shows that, in the two types of general secondary school, between one-fifth and one-quarter of the pupils are not promoted to the next grade each year. Failure rates are consistently higher for boys than for girls. For the earlier years, when enrolment ratios for girls were lower than for boys, the difference between boys and girls might be caused by the fact that girls came from " better " families and were more intelligent. But this argument has now lost its plausibility. Other explanations offered are that these courses may be more suitable for girls or that girls work harder. Table 24 shows a higher repeat rate for boys. A possible explanation is that boys find it more necessary to qualify for career reasons whereas girls tend to leave if success does not come easily.

These Dutch secondary shools are mainly " linear ": admission is by selection of some kind and, normally, pupils who enter are expected to complete the full course. The percentage of age-group admissions is relatively low: for VHMO, 9.7 % of the 12-13 year olds in 1950, 17.6 % in 1964; for ULO, 25.4 % in 1950, 33.1 % in 1964. In view of this a total pass rate of about 50 % and a " normal-time " pass rate of 33 % for ULO and 24 % for VHMO seems low. The recent " Mammoth Law " to reform secondary education, divides former VHMO schools into two groups according to their functions: preparation (*a*) for the university, or (*b*) for other types of post-secondary education and direct entry into professional life. Whether this attempt clearly to identify these two groups of pupils after the first common year at school (known as the " bridge-year ") will successfully reduce repeater and drop-out rates and thus increase the programmes' efficiency, is not yet known.

In *Austria*, although each type of secondary school also has a clearly defined function, the drop-out rate, i.e., the percentage of entrants not passing the terminal examination, is high. The Austrian EIP Report[1] gives the following " retention " rates for pupils who completed their course

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[1] *Educational Policy and Planning: Austria*, OECD, 1968.

TABLE 26. NETHERLANDS: DESTINATION OF SECONDARY PUPILS WHO LEFT SCHOOL WITHOUT CERTIFICATE

	ULO						VHMO					
	MALE			FEMALE			MALE			FEMALE		
	1936	1956	1960	1936	1956	1960	1936	1956	1960	1936	1956	1960
Further education	57	62	61	45	36	34	53	74	68	72	59	56
No further education	43	38	39	55	64	66	47	26	32	28	41	44
Total	100	100	100	100	100	100	100	100	100	100	100	100
Absolute total	3,320	13,460	19,900	6,920	12,300	19,520	3,650	6,160	9,340	1,930	3,580	

Source: Ibid.

TABLE 27. NETHERLANDS: PERCENTAGE OF PUPILS NOT PROMOTED TO THE NEXT GRADE AT END OF SCHOOL YEAR

YEAR		ULO (4-YEAR GENERAL SECONDARY SCHOOL)						VHMO (5 OR 6-YEAR ACADEMIC-TYPE GENERAL SECONDARY SCHOOL)							
		GRADES				TOTAL ENROLMENTS	TOTAL RATE	YEAR	GRADES					TOTAL ENROLMENTS	TOTAL RATE
		I	II	III	IV				I	II	III	IV	V		
1930	Total .	*19*	*15*	*14*	*11*	*61,184*	*16*		*25*	*23*	*22*	*22*	*19*	*45,190*	*23*
	M	21	17	15	10	32,255	19		27	25	23	23	21	30,554	25
	F	17	13	13	11	28,929	14		19	20	19	19	16	14,636	19
1938	Total . .	*19*	*17*	*17*	*12*	*99,582*	*17*		*24*	*25*	*23*	*22*	*25*	*61,693*	*24*
	M	21	19	18	12	54,005	19		27	27	24	23	26	42,250	25
	F	16	15	16	11	45,577	15		18	21	21	22	23	19,443	21
1950	Total . .	*21*	*16*	*15*	*11*	*127,848*	*18*		*25*	*25*	*22*	*23*	*21*	*83,310*	*24*
	M	24	18	16	11	66,083	20		27	27	23	25	21	53,535	25
	F	17	14	13	12	61,765	15		20	22	21	20	20	29,775	21
1955	Total . .	*22*	*18*	*15*	*14*	*169,507*	*18*	(1956)	*23*	*24*	*21*	*25*	*23*	*119,747*	*23*
	M	26	20	15	15	84,285	21		25	26	23	27	23	73,617	25
	F	18	16	14	13	85,222	16		20	21	19	21	24	46,130	20
1960	Total . .	*26*	*22*	*18*	*16*	*264,929*	*22*	(1959)	*24*	*25*	*23*	*26*	*23*	*158,627*	*25*
	M	30	24	18	15	131,697	24		26	28	24	29	23	96,002	26
	F	22	20	17	16	133,232	20		21	22	20	23	24	62,625	21
1964	Total . .	*24*	*20*	*17*	*15*	*276,203*	*20*		*22*	*23*	*21*	*25*	*23*	*202,170*	*22*
	M	28	22	17	14	136,411	21		24	25	22	27	22	118,509	25
	F	20	18	16	15	139,792	18		18	19	18	22	23	83,661	19

Source: Ibid.

during the period 1950-64 (certificated leavers as percentage of corresponding admissions).

General secondary schools	50.6 %
Business academies	57.2 %
Secondary technical and trade schools	67.9 %

As for the Netherlands, the pass rate for trade and technical courses is higher than for general courses, which are much longer. In the *Mittelschulen* (grammar schools) the retention rate between 1953 and 1964 rose from approximately 35 % to over 55 %, even though the number of admissions and graduates roughly doubled; this bears out, as in the Netherlands, that an increase in the number of pupils does not necessarily lower efficiency[1]. The *Mittelschulen* terminal pass rate for 1946 to 1948 admissions was 38 per cent, against 56 per cent for 1931 to 1933 admissions. There was an increase in drop-out between these periods for grades 1 to 4, but a fall from 14 per cent to 7 per cent for grades 5 to 8. More detailed study would doubtless show that in the 1950's the lower 4-year *Mittelschule* was much nearer to a general " comprehensive " lower secondary school than in the 1930's. This implies a change in the function of the lower

TABLE 28. GERMANY: NUMBER OF PUPILS LEAVING AND ADMITTED TO GYMNASIUM

LEFT FROM GRADE	5	6	7	8	9	10	11	12	TOTAL
To other schools[1] :									
1963	8,913	8,507	5,502	4,811	3,106	6,212	1,576	633	39,260
1965	8,023	8,232	5,022	4,155	2,452	6,026	1,277	370	35,517
Left school definitively :									
1963	227	560	2,540	5,405	3,881	14,709	5,475	3,400	36,197
1965	249	265	2,209	4,253	3,549	14,436	4,629	2,049	31,639
Total enrolments (in 1,000's) :									
1962/63	123.6	117.1	125.1	113.1	96.2	80.9	61.1	65.8	782.8
1964/65	141.2	123.6	125.3	117.6	108.6	95.5	70.3	57.0	839.1
% Leavers:									
1963	7.4	7.7	6.4	9.0	7.3	25.9	11.5	6.1	9.6
1965	5.9	6.9	5.8	7.1	5.5	21.4	8.4	4.2	8.0

Admitted:

From *Volksschulen* (grades 6-10):	1963: 9,440 (of which 7,582 from grade 6).
	1965: 10,791 (of which 7,743 from grade 6).
From *Realschulen* (grades 5-10) :	1963: 5,033 (of which 2,156 from grade 10).
	1965: 8,007 (of which 4,791 from grade 10).
Total Admitted:	1963: 14,473
	1965: 18,798

1. Excluding those who changed school, but stayed within the *Gymnasium*.
Source: Wirtschaft und Statistik, 1966, No. 7, pp. 243 ff.

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[1] See *Oesterreichische Schulstatistik*, 1955/1956, p. 11, for a possible explanation of this increase in Austria.

TABLE 29. GERMANY: NUMBER OF PUPILS LEAVING AND ADMITTED TO REALSCHULE

LEFT FROM GRADE	5	6	7	8	9	TOTAL
To other schools[1]:						
1963	6,000	3,456	5,048	2,879	1,981	19,364
1965	6,735	3,408	4,626	2,829	2,420	20,018
Left school definitively:						
1963	52	176	1,765	5,765	4,772	12,478
1965	166	271	1,741	4,723	4,474	11,375
Total enrolments :						
1963	73,364	69,762	99,088	90,988	77,440	410,642
1965	89,730	74,948	102,979	97,412	88,288	453,357
% Leavers :						
1963	8.2	5.2	6.9	9.5	8.7	7.8
1965	7.7	5.0	6.2	7.8	7.8	6.9

Admitted to Realschule:

From *Gymnasia*	1963:	10,947
	1965:	9,960
From *Volksschulen* (grades 6-10)	1963:	34,232
	1965:	41,894
Total	1963:	45,179
	1965:	51,854

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1. Excluding leavers to other Realschulen.

Source: Wirtschaft und Statistik, 1966, No. 7, p. 423 ff.

" academic " junior secondary school, even before the 1962 school reform was carried through, affecting an important proportion of admissions (65 % of the 1946 to 1948 group), for whom it serves as the preparatory stage to further education. The 1962 School Organisation Act recognizes this, certainly for the first two years and, to some extent, for the *gymnasium's* whole lower course of 4 years. The increased overall pass rate between 1953 and 1964 may be due to a change in this trend i.e. to a sharp fall in the percentage of leavers from the first 4 years of the *gymnasium* thus implying for it a less pronounced " comprehensive " function.

Germany's general secondary schools are in theory " linear " but in fact they have a lower section with a " branching " function so that, as in the Netherlands and in Austria, drop-out and pass rates have to be considered very carefully. Table 23 (first year admissions, and certificated leavers) shows that the *realschulen* have a high pass rate, and the *gymnasia* a much lower one. The greater length of the *gymnasium* course cannot itself explain this difference, for most drop-outs probably occur in the lower section.

Table 23 also shows that the pass rate in the *gymnasium* has increased considerably over the past ten years, the obvious explanation being that drop-out in the lower school has fallen. Table 28 and 29 seem to suggest that the later admissions from the *volksschule* (primary school) or the *realschule* (non-academic general secondary) which do not appear in our admission data in Table 23, had considerable effect. Table 30 summarizes Tables 28-29 and shows the importance of later admission, transfer and drop-out in both types of schools.

TABLE 30. GERMANY: GENERAL SECONDARY SCHOOLS, LEAVERS AND ADMISSIONS 1963-1965

GYMNASIUM

YEAR	TOTAL LEFT FROM GRADES 5-12	OF WHICH TO OTHER SCHOOLS	TOTAL ADMISSIONS, FROM GRADES 6-10 VOLKSSCHULEN AND 5-10 REALSCHULEN	DIFFERENCE BETWEEN COLUMNS 3 AND 1
1963	75,457	39,260	14,473	— 60,984
1965	67,156	39,197	18,798	— 48,358

REALSCHULE

YEAR	TOTAL LEFT FROM GRADES 5-9	OF WHICH TO OTHER SCHOOLS	TOTAL ADMISSIONS FROM GYNMASIA (ALL GRADES) AND FROM GRADES 6-10 VOLKSSCHULEN	DIFFERENCE BETWEEN COLUMNS 1 AND 3
1963	31,842	19,364	45,179	+ 13,327
1965	31,393	20,018	51,854	+ 20,461

Source: " Uebergänge und Abgänge aus allgemeinbildenden Schulen 1963 *bis* 1965 " in: *Wirtschaft und Statistik*, 1966, Heft 7, pp. 423-427 and 438-443.

For both types of schools the leavers shown are those who left before reaching the final grade; the figures for " admissions " do not include pupils entering at the " normal " time, i.e. from grades 4 or 5 of primary schools (but do include the large number transferring from grade 6 of primary schools, as is the practice in several German *Länder*). The table thus shows only transfers and drop-outs during the course. In this process the *gymnasium* loses. and the *realschule* gains, pupils, this " profit " contributing significantly to the latter's high pass rates. As in the Netherlands and Austria, the majority of these leavers are not drop-outs from the school system but transfers to other types of schools. For the *gymnasium*, at the end of grade 10, an intermediate certificate (*Mittlere Reife*) may be obtained, equivalent to the *realschule* leaving certificate; about one-fifth of the pupils in this grade leave school at that point and are not drop-outs in the usual sense. These data, and in particular the more detailed analyses in Tables 28 and 29, show that, for both the *gymnasium* and the *realschule*, late (transfer) admissions plus drop-out affect a considerable proportion of the pupil population. For example, in both 1963 and 1965, nearly 20 % of total enrolment in the *realschule* and, in the *gymnasium*, 11,5 % and 10.2 % respectively for each year. For what concerns the above-mentioned increased success rates in the *gymnasia*, however, these data suggest that they are not the result of massive later admissions, but of a genuine increase in the *gymnasia's* retention rate.

A special report on the pass rate in *gymnasia* from 1952-1966 in the Land of Hesse[1] provides more detail concerning the period at which drop-out is highest and confirms the hypothesis of a higher retention rate in recent years.

The largest drop-out occurs in grades 7-10 (grade 7 was taken as base year) and falls considerably in the higher grades although it does not disappear even in the highest (11 and 12) when pupils have been in *gymnasium* for at least 4-5 years. The pass-rates improved from 38.5 in 1959 to 55.7 in 1966 (per 100 entrants) mainly because of a considerable reduction in the percentages of leavers in grades 7-10.

TABLE 31. GERMANY: PASS RATE IN HESSE GYMNASIA, 1952-1966

YEAR	NO. OF PUPILS	GRADES							LEAVING CERTIFICATE % OF 7
		7	8	9	10	11	12	13	
		%	% OF 7	% OF 7	% OF 7	% OF 7	% OF 7	% OF 7	
1952	14,077	100							
1953	14,130	100	89.1						
1954	14,087	100	90.3	78.1					
1955	15,737	100	91.1	80.2	72.9				
1956	14,478	100	88.9	81.4	75.5	45.7			
1957	12,377	100	90.0	81.7	74.6	51.0	42.7		
1958	9,269	100	92.6	82.3	75.1	54.1	48.2	40.3	
1959	10,170	100	93.7	85.6	75.4	56.7	51.8	44.4	38.5
1960	10,561	100	90.7	86.9	78.3	57.7	51.6	47.5	41.8
1961	11,549	100	90.0	82.7	81.5	62.3	53.0	46.6	44.9
1962	11,350	100	91.3	82.0	77.8	68.2	56.6	48.2	43.9
1963	11,136	100	94.2	84.1	77.3	67.0	65.3	51.7	45.8
1964	11,270	100	93.7	89.3	79.4	69.5	62.0	61.6	49.0
1965	12,192	100	95.8	90.0	85.3	75.5	65.4	58.1	58.9
1966	13,206	100	95.8	91.8	86.3	85.8	71.4	59.4	55.7

NOTE : In order to calculate a more reliable pass rate, the study considers the pupils in grade 7 (quarta) as entrants. The figures in the last row refer to the certificated leavers (abitur) of that year, as a percentage of 7th grade pupils (= 100 %) 6 years earlier.

German data show (as did those for the Netherlands and Austria) that the lower general secondary school serves for a large (over 50 %)[2] proportion of pupils as a period of orientation and/or general education leading to further secondary education or professional employment. In the *gymnasium,* this stage terminates with the *Mittlere Reife* certificate. Unless the schools have adequate orientation and guidance services, re-orientation during the lower school is mostly the result of academic failure; and guidance is feasible only if the schools' curricula, streaming and teaching approach, are suitably adapted. The tendency in the German *Länder* to create school communities (Gesamtschulen) which facilitate transfers between the various school types and other measures to make transfers or later admission easier, are a first step towards adapting the educational system to its present role. Whether these measures answer the problem is not yet known, but the guidance apparatus required is costly and complicated and many countries have not yet managed to make it work.

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[1] " Vorbericht ueber die Ergebnisse der Erhebung an den Allgemeinbildenden Schulen in Hessen zum 15.5.1966 ", Table 14 (mimeographed) made available by Hesse Ministry of Education, Wiesbaden.

[2] In most *Länder* pupils enter the *gymnasium* after grade 4 of elementary school and the lower cycle is thus usually two years longer than in Hesse.

In *Yugoslavia* enrolments in upper primary and secondary education have expanded very rapidly. The growth index for secondary schools for 1965 (1955=100) was 213[1]. In the 8-year primary school the increase in enrolments is due mainly to the improved application of the 8-year compulsory schooling measures. Consequently the primary completion rate, defined as the percentage of entrants which completes grade 8, increased from 40.2 per cent in 1960/61 to 47.9 per cent in 1963/64[2]. This overall increase is a result of the percentage of pupils transferring from one grade to the next (instead of leaving school), although this higher " productivity " has been achieved at the cost of " efficiency " in a different sense; the percentage of repeaters from 1960/61 to 1964/65 increased considerably in all grades (see Table 32).

TABLE 32. YUGOSLAVIA: REPEATERS, BY GRADE, IN PRIMARY SCHOOLS
AS PERCENTAGE OF TOTAL ENROLMENT BY GRADE[1]

YEAR	GRADE							
	I	II	III	IV	V	VI	VI	VIII
1960/61	5.2	1.9	1.5	1.3	3.2	4.1	2.7	0.9
1961/62	6.2	4.4	3.1	3.1	4.9	7.6	5.1	1.7
1962/63	9.3	5.0	4.7	4.2	7.8	9.3	7.6	2.9
1963/64	9.1	7.2	6.5	6.6	10.5	13.5	11.0	4.5
1964/65	10.0	7.4	7.0	6.6	11.8	13.0	11.3	3.7

1. Information obtained from the Yugoslav authorities.

This increase is ascribed to overcrowding of class-rooms, too high burdens on teachers, insufficient professional qualifications of teachers, inadequate school equipment and other weaknesses of the Yugoslav elementary school than can all be brought under the heading " poor quality of teaching ".

In secondary education the sharp increase in enrolments has been accompanied by a fall in the overall pass rate, and a sharp increase in repeater percentages in most types of school.

The Yugoslav authorities attribute this fall in efficiency, expressed in terms of lower pass rates and higher repeater rates, to the system's inability to deal with the increased numbers. Their report[3] says " A high rate of drop-out at the secondary level ... greatly defeats the positive effect of the high percentage of continuation of school following the successful completion of the compulsory elementary education (the number of successful primary pupils continuing in secondary schools increased from 99,137 in

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[1] See Table 1.
[2] From unpublished data made available by the Yugoslav authorities.
[3] " The Development of Education in Yugoslavia in the Period 1966-1970 and its Adaptation to the Needs of the Economy ard Society ", OECD, 1966 (mimeographed).

TABLE 33. YUGOSLAVIA: CERTIFICATED LEAVERS FROM SECONDARY SCHOOLS[1]

AS PERCENTAGE OF FIRST-YEAR ADMISSIONS « X » YEARS BEFORE

YEAR	TOTAL SECONDARY	GYMNASIA	TECHNICAL AND VOCATIONAL	TEACHER TRAINING	SCHOOLS FOR SKILLED WORKERS
1961/62	74.7	60.2	65.1	69.4	77.6
1962/63	72.6	53.9	60.3	57.5	68.3
1963/64	65.7	53.8	59.3	52.1	79.9

[1] Information obtained from the Yugoslav authorities.

TABLE 34. YUGOSLAVIA: REPEATERS, BY GRADE, IN SECONDARY EDUCATION[1]

AS PERCENTAGE OF TOTAL ENROLMENT BY GRADE

YEAR	GYMNASIUM				TECHNICAL AND VOCATIONAL SCHOOLS			
	I	II	III	IV	I	II	III	IV
1961/62	6.2	7.5	6.0	2.1	8.9	6.4	4.6	1.4
1962/63	9.2	7.6	6.3	2.9	11.2	8.2	5.1	1.6
1963/64	11.7	9.7	5.3	2.2	13.3	9.5	5.7	2.6
1964/65	11.1	10.0	6.6	1.2	13.1	10.5	6.2	1.6

[1] Information obtained from the Yugoslav authorities.

TABLE 35. ITALY: PASS RATES IN SECONDARY SCHOOLS[1]

YEAR	FIRST YEAR ENROLMENTS	YEAR	NO. OF LEAVING CERTIFICATES	% PASS RATE
	GYMNASI — LYCEI			
1951/52	39,771	1955/56	25,670	64.5
1955/56	46,920	1959/60	32,017	68.4
1956/57	46,173	1960/61	31,948	69.2
	ISTITUTI TECNICI			
1951/52	36,329	1955/56	25,908	71.3
1955/56	64,268	1959/60	44,369	69.0
1961/62	106,776	1964/65	61,349	57.5

[1] These data, which are also contained in Table 23, are the result of a simple first-year enrolment-leaving certificate comparison and *not* of a cohort study.

1959/60 to 183,572 in 1963/64). The rich influx of elementary school graduates into the first form of secondary school is already neutralised in the first and second form through drop-out. ... The low coefficient of successful completion ... clearly warns that there are only limited possibilities of increasing the efficiency of the secondary school within a brief space of years—particularly if no special measures are taken to rectify the situation ". Fundamental changes to the structure of secondary education have been under discussion for some time in Yugoslavia in an attempt to adapt the system of secondary education to the large influx of pupils—influx which tends to reduce efficiency. Yugoslav experience may be exceptional: increased enrolments are not always accompanied by lowered efficiency.

Italy provides evidence both for and against the argument. Though enrolment increased more in the technical institutes than in general secondary schools, there is a striking difference in the evolution of the pass rate as between the two schools. Other, less tangible factors must be at work, e.g. a difference in admissions policy which, although standards remained the same, resulted in an increased drop-out rate in the technical institutes; or perhaps a stiffening of standards in the technical institutes, coinciding with the recently introduced right for their certificate holders to enter higher education. The repeater rates in Italian secondary education (Table 36) and the pass rates in final examinations (Table 37), may partly explain the low pass rates in Table 35. Inevitably, these severe standards, as reflected in repeater and pass rates, lead to high failure and drop-out percentages. Unfortunately, no reliable information on the latter in secondary education is available for Italy. However, the increased number of pupils did not, in general, cause repeater rates to rise, as in Yugoslavia.

Grades are repeated, however, by a large proportion of the pupils in many countries, though practices vary even in comparable types of schools. In the Yugoslav primary schools, for example, the percentage has increased rapidly in the past few years, but for grades 1-5 it oscillated in 1964 only between 6.6 per cent and 11.8 per cent. In Italy, the 1962/63 percentage for the same grades (1-5) is 10.3 at its lowest and 13.5 at its highest. Similar differences can be observed for *gymnasia* in Italy, Yugoslavia and the Netherlands.

In *France* the repetition of grades causes a wide age-spread at the terminal examination. Graph I shows the age breakdown of pupils in the last year of elementary education and the seven years of secondary.[1] By the 5th year of primary school 49.9 per cent of the pupils were already one or more years behind. Two years later, in the " 5^e " class of secondary school, there are more pupils who are one year behind than who are in their age class (38.8 per cent as compared with 37.0 per cent). From that grade on the " model " age breakdown used is that of the " 5^e " which does not change in the following years, probably due to the drop-out of pupils in the subsequent grades.[2]

For *Portugal* a quotation from its MRP Report[3] shows how grade repetition in secondary schools affects the average age in each grade:

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[1] The *classes supérieures* have been left out here. *Source:* Tableaux de l'Éducation nationale, Ministère de l'Éducation nationale, Service central des Statistiques et de la Conjoncture, Paris, 1966, pp. 195-196.

[2] Similar data for 1956 can be found in a study carried out under the responsibility of Roger Gal and published by the Institut Pédagogique national (« Une enquête sur les retards scolaires », Publication de l'IPN, Brochure N° 140/EP, mars 1958.)

[3] *Mediterranean Regional Project: Portugal,* OECD, 1965, p.p. 26.

Table 36. ITALY: REPEATER PERCENTAGES BY GRADES

YEAR	GRADE									
	1		2		3		4		5	
	PUPILS IN'000	% REPEATERS	PUPILS IN'000	% REPEATERS	PUPILS IN'000	% REPEATERS	PUPILS IN'000	% REPEATERS	PUPILS IN'000	% REPEATERS
A. Gymnasi and liciei										
1953/54	34.9	7.6	27.8	6.2	25.7	8.0	20.4	5.5	21.5	11.2
1956/57	34.3	10.0	30.0	9.7	30.2	10.9	25.1	7.2	25.1	14.0
1959/60	32.5	8.9	26.8	9.0	29.3	11.2	26.2	6.6	28.3	13.8
1962/63	38.9	8.6	32.9	7.4	32.4	10.1	25.1	6.4	24.9	12.9
B. Scuola media										
1953/54	176.3	14.5	150.9	13.0	129.4	8.1				
1956/57	203.0	15.0	130.5	14.1	106.8	10.3				
1959/60	318.1	14.0	203.1	13.3	139.7	9.5				
1962/63	668.1	17.0	515.9	14.0	410.1	9.2				
C. Scuola elementare										
1953/54	1,178.6	22.1	1,007.0	15.4	867.3	17.4	788.7	12.8	675.8	7.0
1956/57	1,050.1	19.2	1,056.0	14.3	1,020.6	14.0	909.5	9.8	739.1	5.3
1959/60	874.0	10.3	894.9	13.8	875.4	7.1	923.4	4.3	856.6	5.3
1962/63	924.3	13.5	917.3	13.4	862.2	10.5	826.4	10.3	799.9	11.0
D. Istituto tecnico industriale										
1959/60	24.6	12.4	18.4	18.2	12.6	15.6	9.7	12.3	8.1	9.6
1964/65	75.3	14.5	51.6	17.1	40.5	13.0	26.6	9.4	18.2	6.4

Source : Annuario Statistico Dell'Istruzione Italiana, Istituto Centralo Di Statistica, Rome (from several issues).

Table 37. ITALY: PASS RATES IN FINAL EXAMINATIONS, SECONDARY EDUCATION

General secondary schools (licei) and technical (istituti tecnici)

YEAR	MATURITA SCIENT.		MATURITA CLASSICA		IST. TEC. COMMERCIALI		IST. TEC. PER GEOMETRI	
	EXAMINED	% PASSES	EXAMINED	% PASSES	EXAMINED	% PASSES	EXAMINED	% PASSES
1950/51	9,251	71.6	25,555	74.4	10,567	72.7	7,480	70.5
1955/56	9,094	67.3	26,674	73.2	18,254	75.3	4,249	70.6
1959/60	11,187	71.4	31,659	75.8	30,015	81.5	7,054	75.4
1961/62	11,630	73.2	30,314	78.9	31,901	81.9	7,609	76.2

Source : Ibid.

Graph 1. FRANCE : BREAKDOWN BY AGE OF PUPILS IN GRADES 5-12 IN PRIMARY AND SECONDARY SCHOOLS
1964-1965

	AGES				
PRIMARY EDUCATION	9	10	11	12 +	
Grade 5 of elem. (Cours moyen, 2^{e} année)	–	xxxx	+	++	
	8.7 %	41.4 %	32,8 %	17,1 %	
SECONDARY EDUCATION (1)	– 10	11	12	13 +	
Classe de sixième	–	xxxx	+	++	
	9,2 %	43,9 %	38,6 %	8,3 %	
	– 11	12	13	14	15 +
Classe de cinquième	– –	–	xxxx	+	– –
	8,1 %	37,0	38,8 %	14,4 %	1,7 %
	– 12	+ 13	14	15	16
Classe de quatrième	– –	–	xxxx	+	++
	7,2 %	31,8 %	41,1 %	17,1 %	2,8 %
	– 13	14	15	16	17 +
Classe de troisième	– –	–	xxxx	+	++
	6,5 %	29,4 %	39,5 %	19,4 %	6,2 %
	– 14	– 15	16	17	18 +
Classe de seconde	– –	–	xxxx	+	++
	6,8 %	28,8 %	39,0 %	20,8 %	4,6 %
	– 15	16	17	18	19 +
Classe de première	– –	–	xxxx	+	++
	6,8 %	25,4 %	37,7 %	23,8 %	6,3 %
	– 16	17	18	19	20 +
Classe terminale	– –	–	xxxx	+	++
	8.8 %	29,1 %	35,0 %	18,7 %	8,4 %

+	: One year above "normal" age.	–	: One year below " normal " age.
++	: Two years above "normal" age.	– –	: Two years below "normal" age.
xxxx	: "normal" age.		

1. In France, the first year of Secondary Education is called "classe de sixième"; the highest grade is called "classe terminale".

Source : Tableaux de l'Education nationale, 1966.

" ... 1961-62, among the pupils enrolling for the first time in the first year at *lycées* (normal age 10-11 years), only 70.9 per cent of the girls and 76.1 per cent of the boys were 11 or under; in elementary technical education there were 48.7 per cent and 56.7 respectively; among first-year enrolments at intermediate school level for the same year (normal age 15-16 years) only 23.7 per cent of the girls and 18.1 per cent of the boys were under 16 ".

The high failure rates in examinations explain why the percentage of over-age pupils increases so heavily in the higher secondary classes. Table 38 shows the percentage of examination passes for selected years.

TABLE 38. PORTUGAL: PERCENTAGE OF SUCCESSFUL PUPILS (EXAMINATION PASSES) IN SECONDARY SCHOOLS BY GRADE[1]

1. LYCÉES (Classics side)

YEAR	GRADES						
	1	2	3	4	5	6	7[2]
1950/51	85.5	71.6	82.9	87.0	47.2	68.9	58.7
1956/57	86.4	73.3	87.8	88.5	52.2	58.2	59.7
1960/61	82.3	70.0	79.9	83.2	49.9	64.3	55.5

2. TECHNICAL EDUCATION (Preparatory course)

YEAR	GRADES	
	1	2
1950/51	79.1	63.0
1960/61	76.7	69.3

3. COMMERCIAL SCHOOLS

YEAR	GRADES			
	1	2	3	PREPAR. SECTION
1960/61	44.6	44.6	43.5	59.4

4. INDUSTRIAL SCHOOLS

YEAR	GRADES			
	1	2	3	PREPAR. SECTION
1960/61	57.1	54.3	74.8	66.6

[1] See *MRP Report, Portugal*, OECD, pp. 89 ff.
[2] State education only.

Similar conclusions may be drawn for many other countries; two of the consequences of this heavy failure rate are as follows:

a) Some children never complete the elementary education course and are thus ineligible for secondary education. These are the " problem " pupils of education, potentialy illiterate, and likely to join the ranks of the unskilled and semi-skilled workers. In an industrialised society, such workers are unemployed, and becoming unemployable, to an increasing extent. The European counterparts of high school drop-outs in the USA and Canada are those who either never completed elementary or primary education, or who required several additional years to do so.

b) Within each school, in the lower grades, there is a high percentage of pupils who repeat the class and are older than the " model " age; in the higher grades the pupil/class ratio is often smaller than is economically or educationally desirable. In sparsely populated areas this may create the practical difficulty of maintaining the upper secondary grades for a few pupils. The unequal number of pupils in grades is an obstacle to any rational planning or distribution of resources (teachers, classrooms). Educational disadvantages are even greater: in the overcrowded lower grades it

TABLE 39. CANADA: PERCENTAGE OF PUPILS STILL IN SCHOOL BY GRADE (COHORT 1952/53 TO 1964/55) FOR SELECTED PROVINCES[1]

	GRADES								
	II	VI	VII	VIII	IX	X	XI	XII	XIII
Newfoundland:									
Boys	100	95	89	81	68	51	43	—	—
Girls	100	98	93	86	72	54	40	—	—
Quebec[2]*:*									
Catholic schools:									
Boys	100	92	88	80	67	47	38	20	—
Girls	100	96	92	76	65	48	37	7	—
Protestant schools:									
Boys	100	100	87	74	74	70	54	6	—
Girls	100	100	91	70	70	69	58	4	—
Ontario:									
Boys	100	100	100	94	92	73	52	48	24
Girls	100	100	100	100	98	81	62	54	28
Alberta:									
Boys	100	100	100	97	93	81	80	54	—
Girls	100	98	96	92	91	83	82	50	—
British Columbia:									
Boys	100	100	100	100	96	89	78	64	12
Girls	100	100	100	100	95	90	79	52	8

1. Enrolment in grade II = 100.
2. In Quebec, Roman Catholic and Protestant school systems are separate.

is difficult to give extra attention to those pupils who most need it, and little or no profit is gained from their repeating a grade.

A *Canadian* survey shows the percentage of those still in school, by grade, in the different Canadian provincial school systems for the age-cohort which was 7 years old in 1952/53, and which was followed through to 1964/65 to the age of 19.[1] Table 39 shows a breakdown by grade of the progress rate for a few important provinces.

The exceptionally high percentage of those still in school after grade VIII in British Columbia, Alberta and Ontario contrasts with the low rates for Catholics in Quebec and, to a less extent, with those for Newfoundland. Whereas after grade 9 the two latter retain only about 50 per cent, the percentage varies from 69 to 90 for the other provinces shown. In the final years the differences between provinces are even greater. The repeater rates —as shown in Table 40—ar low in the provinces with the highest retention rates (British Columbia and Alberta) and high in those with low retention rates (Quebec and Newfoundland). This suggests that a connection may exist between the two, and, if this is so, would be a good reason for re-considering repeater practices.

TABLE 40. CANADA: PERCENTAGE BREAKDOWN OF REPEATERS BY GRADE IN SELECTED PROVINCES

	GRADES								
	II	VI	VII	VIII	IX	X	XI	XII	XIII
Newfoundland:									
Boys	16	9	11	10	24	20	10	10	—
Girls	10	6	8	8	25	15	10	10	—
Quebec:									
Catholic schools:									
Boys	11	14	8	7	8	9	10	5	—
Girls	8	8	3	1	2	7	7	3	—
Protestants schools:									
Boys	7	8	10	16	10	15	15	5	—
Girls	4	5	6	12	8	10	10	3	—
British Columbia:									
Boys	7	2	4	7	8	2	5	5	10
Girls	4	2	3	5	6	2	5	5	10

High repeater rates mean not only increased drop-out rates, but also a large proportion in each grade who are above normal age. The extent to which these differences may be explained by the nature of the school system (its structure, curricula and teaching methods) or by the social and economic characteristics of the different provinces, cannot be considered here, although the problems caused by repeater practices, drop-outs and related phenomena seem very much the same in most OECD Member countries.

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[1] *Student Progress through the Schools by Age and Grade, 1965*. Dominion Bureau of Statistics, Feb. 1966.
(French: La persévérance scolaire par âge et par classe).

Data on " internal efficiency " (repeaters, drop-outs, pass rates in examinations, etc.) show great diversity in educational practices or " traditions " as between countries, and considerable stability in these practices or traditions over time. Such *diversity* is inevitable when dealing with 22 different educational systems. The advisability of repeating grades is very doubtful; research results on the soundness of examination criteria are not reassuring. The differences in grade repetition practice in comparable types of schooling, differences between countries, within one and the same country, and often between schools in the same town also make for greater uncertainty. The differences in the pass rates in examinations of the " baccalauréat " level illustrate this. The *stability* in these rates over time, in spite of changes in educational policy, increased enrolments, profound changes in structures and curricula, the recruitment of new generations of teachers and the construction of new school buildings, is startling. It would be naive to take comfort from the fact that in many countries repeaters and pass rates remained constant when enrolments doubled or trebled. On the contrary, this should be a cause for anxiety on the part of educationists and policy-makers and should certaintly receive urgent attention in any educational system faced by a conflict between limited resources and unlimited demand for them. This is precisely the situation which most OECD Member countries will be facing in the near future. There is no simple way out of these resource constraints. Some possible solutions will be discussed later, but at this stage of our report no remedy can be given for the lack of internal efficiency in primary and secondary education in OECD countries. A better awareness of the problem, and of the irrational nature of many current uses and abuses, might help open the way to a wider, research-minded approach to these problems. This might start with a simple question, such as: how can a school where repetition of grades is *not* practised survive without a catastrophic lowering of standards?

III. INEQUALITIES IN SECONDARY EDUCATION PARTICIPATION

No attention has yet been given to regional and social differences in repeater, drop-out and pass rates. Evidence of these exists, however, and shows that the expansion in secondary education enrolments has not been accompanied by adequate measures to adapt courses, methods, and ultimately values, to the new types of pupils crowding into the schools. The extent to which numerical expansion has been achieved by reducing the differences in participation due to region, social brackground or sex will be considered and also the extent to which it has not affected inequalities. The most sensitive indicator of these inequalities is perhaps the percentage who complete upper secondary education and thus obtain admission to higher education. Some countries publish breakdowns by sex and region for this level of education, so that a comparison for a fair number of countries is possible.

Table 41 gives a breakdown by sex of certificated secondary-schools leavers for the 1950's and 1960's. In this period both absolute and relative numbers of graduates have increased — trebling in some OECD countries and doubling in others.

Table 41. PERCENTAGE BREAKDOWN OF CERTIFICATED LEAVERS BY SEX, FROM UPPER SECONDARY EDUCATION

COUNTRY		1950	1955	1960	1965 OR LATEST YEAR AVAILABLE
Japan	M	n.d.	54	52	51
	F	n.d.	46	48	49
France	M	n.d.	54	52	51
	F	n.d.	46	48	49
USA	M	48	48	49	49
	F	52	52	51	51
Sweden	M	n.d.	59	57	55
	F	n.d.	41	43	54
Norway	M	60	60	61	57
	F	40	40	39	43
Italy	M	69	71	70	67
	F	31	29	30	33
England and Wales	M	n.d.	64	64	64
	F	n.d.	36	36	36
Germany	M	66	67	64	64
	F	34	33	36	36
Portugal	M	69	67	64	60
	F	31	33	36	40
Belgium	M	79	76	68	61
	F	21	24	32	39
Spain	M	n.d.	82	74	72
	F	n.d.	18	25	28

Some Member countries have now achieved equality between the sexes for participation in upper secondary education (e.g. Japan, France, USA, with Sweden and Norway rapidly approaching it). Others, despite wide initial differences, have been moving towards equality over the past decade (Belgium, Spain, and Portugal). A third group of countries (Italy, England and Wales, and Germany), retained the same porportion 2:1 of male:female passes inspite of the large numerical increase. There is considerable potential here for further growth if a larger proportion of the female population can be attracted and/or retained. The breakdown by sex of the pupils in the different streams is also important since male or female pupils tend to concentrate in certain streams. Table 42 gives the breakdown of certificated leavers from the Swedish general *gymnasium*, by stream, between 1957 and 1962.

These figures do not include technological and commercial *gymnasia*, in which there are heavy concentrations of students of the same sex (males

Table 42. SWEDEN: PERCENTAGE BREAKDOWN BY SEX AND STREAM OF SECONDARY SCHOOL CERTIFICATED LEAVERS

		MODERN		CLASSICAL	SCIENCE		OTHER	TOTAL
		SOCIAL	LANGUAGES		BIOLOGY	MATHS		
1957	F	15.5	17.4	44.7	16.1	2.9	3.4	100
	M	16.4	9.0	20.6	25.5	23.1	5.4	100
1962	F	19.7	16.3	38.8	18.3	6.9	—	100
	M	17.9	5.5	14.6	26.0	36.0	—	100

attending the technological and females, commercial schools). Both sexes show a growing preference for the social science and scientific streams, and a shift away from the language and classical streams, particularly among female pupils. If the latter take science, they prefer biology to mathematics. Sweden increased the number of certificated leavers from 9,000 to 15,474 between 1957 and 1962 and at the same time more or less achieved equality of educational participation as between the sexes. Differences still remain in the types of participation, and do so in most Member countries.

Regional inequalities in participation rates also exist in all Member countries. The Annex to this section[1] shows the uneven regional expansion in secondary school certificated leavers in two Mediterranean countries (Italy and Spain) and two in North Western Europe (France and Germany). In Italy where the overall rate of expansion was 33 per cent between 1955 and 1963, it was twice as fast in Basilicata and more than three times as fast in Sardegna. But expansion in Liguria, Toscana and Emilia Romagna was much slower than the national average. Over roughly the same period there was a 50 per cent expansion in Spain, but, in Barcelona the number of certificated leavers doubled and in Oviedo and Sevilla increased only very slightly. In France, the increase in *bacheliers* was only half the national average in Caen, Rennes and Poitiers, but was well above it in Dijon, Grenoble and Besançon. Finally, the absolute numbers obtaining the *Abitur* actually fell in West-Berlin and Hamburg between 1955 and 1965, but increased in all other *Länder*, in some of them by as much as 40 to 50 per cent. These absolute increases, however, do not take into account the proportion of the age-group affected, nor the changes in this proportion over time. For France and Norway, figures are available showing how growth in total enrolment has affected regional differences in enrolment ratios. As the same index has not been used for the two countries therefore, comparisons of enrolment rates cannot be made. In Norway, the index used is the percentage of the age-group in the first year of *gymnasium* (had the three " real " school classes been added, overall enrolment would have swollen to 38.7 per cent in 1958 and 49.0 per cent in 1964), and in France, the attendance rate in first year secondary school. In each case, regions have been ranked according to their first year participation (1958/59 in Norway and 1954/55 in France) and divided into four groups in descending order of enrolment-attendance percentages, which were then calculated for the second year of reference (1962/63 for France, 1964/65 for Norway) as shown in Table 43.

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[1] Tables 48 to 53.

TABLE 43. NORWAY, FRANCE: CHANGING REGIONAL DISPARITIES IN EDUCATION

	NORWAY 1st YEAR GYMNASIUM AS PERCENTAGE OF AGE-GROUP		FRANCE 1st YEAR SECONDARY SCHOOL AS PERCENTAGE OF AGE-GROUP	
	1958	1965	1954	1962
Group 1	21.6	29.9	46	64
Group 2	14.9	21.9	39	58
Group 3	10.0	17.7	30	49
Group 4	6.8	14.0	26	45
Whole country	14.1	21.6	38	56

In both countries participation at secondary level has increased by roughly 50 per cent and, irrespective of the initial participation enrolment ratios, although in varying degrees, has risen in all regions. Regions with a relatively low participation increased more rapidly than those with a relatively high one. Differentials are narrowed, not by redistribution, but by differing rates of expansion. Even after a period of rapid expansion, consistent and large regional differences remain.

Regional disparities in educational participation have been intensively studied in Sweden, and the distance between place of residence and school was found to be a very important factor in upper secondary education. In 1961, the proportion of the age-group entering the " academic " *gymnasium* was 25 per cent where there was a local *gymnasium*, 13.5 per cent where a student had to commute, and 11.5 per cent where he had to board. Fifteen years earlier the percentages had been 13, 3.5 and 2.5 per cent respectively. Differentials had narrowed with increasing participation, but had certainly not been eliminated. The location of schools therefore affects overall participation. Traditionally the Swedish *gymnasium* has three main and, until 1966, separate sections: academic, commercial and technical. The majority of the students chose the academic course; the size of the commercial-technical minority varied with the availability of facilities. Nearly one-third of the students in areas where all three sections were available near home chose the commercial or technical sections; this proportion fell to one-fifth if they had to go outside their home area to do so. This sort of information was useful to the Swedes when formulating educational policy: access to the *gymnasium* was widened by integrating the three sections into one upper secondary school, and so facilitating geographical participation in the technological and commercial lines. In Norway, for a different level of education, the authorities have found that regional disparities in participation depend to some extent on the availability of boarding school facilities especially in the rural areas with a low population density.

Social origin is also the cause of wide disparities in educational participation as illustrated by French data: more than 9 out of 10 youngsters from upper middle class homes (liberal professions and higher managerial) enter class 6 (CEG and *lycée*), but not even one in two from semi- or unskilled manual workers' homes, and three-quarters of the former go to the *lycée*, but only one-third of the latter.

The extent to which the expansion in educational enrolment has narrowed the class differential in educational participation is difficult to say, for only systematic information over time would allow definite conclusions to be drawn for individual countries, and information is certainly not available for the whole OECD area. Broadly speaking, the conclusion drawn for regional differences applies equally to those due to social class: differentials have been narrowed, but not eliminated. In the absence of data for all or most countries this point can be illustrated only by examples of which two stand out, i.e. England and Wales and Denmark. Table 44 which shows the percentage of children from different occupational groups admitted to selective academic education in England and Wales, is based on an analysis of a series of surveys completed in the United Kingdom.

TABLE 44. ENGLAND AND WALES:
GRAMMAR SCHOOL ENROLMENT OF CHILDREN
FROM DIFFERENT OCCUPATIONAL GROUPS

SEX	FATHER'S OCCUPATION	PER CENT ADMITTED TO SECONDARY EDUCATION IN GRAMMAR AND INDEPENDENT SCHOOLS			
		BORN PRE-1910[1]	BORN 1910-19[1]	BORN 1920-29[1]	BORN LATE 1930's[2]
Boys:					
Groups 1-3	Professional/Managerial.	37	44	54	62
Groups 4-5	Other Non-Manual and Skilled Manual.	7	13	15	20
Groups 6-7	Semi- and Unskilled.	2	4	9	10
All boys		12	16	19	23
Girls:					
Groups 1-3	Professional/Managerial.	37	50	50	62
Groups 4-5	Other Non-Manual and Skilled Manual.	7	13	16	20
Groups 6-7	Semi- and Unskilled.	1	3	5	10
All Girls		11	16	17	23
Boys and Girls:					
Groups 1-3	Professional/Managerial.	37	47	52	62
Groups 4-5	Other Non-Manual and Skilled Manual.	7	13	16	20
Groups 6-7	Semi- and Unskilled.	1	4	7	10
All children		12	16	18	23

1. Data from Glass, D.V., *Social Mobility in Britain*.
2. Data from HMSO, Advisory Committee on Education 15-18 (the Crowther Report).

This is a long period and covers four generations of children. During this period the percentage admitted to this type of education nearly doubled (from 12 per cent to 23 per cent), class differences persisting throughout. A comparison of the last two cohorts shows an expansion from one child in six to almost one in four, but little narrowing of the class difference. The proportion of children from professional and managerial homes was from 3 to 6 times bigger than that from the other two occupational groups. Denmark also shows striking stability in class participation over time. Table 45 gives the parents' occupation for gymnasium leavers for the years: 1951, 1956, 1961. During this period the proportion of the age-group obtaining the leaving certificate increased from 4.7 per cent to 7.0 per cent.

TABLE 45. DENMARK: OCCUPATIONAL BACKGROUND OF PARENTS OF CERTIFICATED GYMNASIUM LEAVERS

In percentage.

	1951	1956	1961
Higher Non-Manual	36.4	38.5	37.0
Tradesmen	28.9	24.4	25.4
Clerical	19.0	19.9	19.2
Agriculture	7.5	7.3	6.9
Manual	5.6	6.5	8.0
Other	2.6	3.4	4.5
Total	100	100	100
Number of leavers	2,803	3,368	5,455

Although Table 45 shows little change in leavers' origins this does not necessarily mean unequal participation since data are not related to proportions of the total population. Throughout this period, slightly under 20 per cent of the pupils in the final grades of compulsory schooling came from agricultural homes, and 32 per cent from manual working class homes. Together they make up over half the population, but between 13-15 per cent of certificated *gymnasium* leavers. There was apparently little or no change in participation at this educational level, despite a 50 per cent expansion in the number of certificated leavers. This stability persisted in spite of the efforts of educational authorities in Denmark and in England and Wales to equalize opportunity.

In *the Netherlands* the number of certificate holders leaving general secondary education (VHMO) more than doubled between 1949 and 1960 (from 9,359 to 21,120)[1]; the percentage of males from upper middle class homes remained unchanged at 25 per cent, and that from lower class homes increased only slightly from 21 to 23 per cent. Between 1953 and 1959 the number of certificate holders leaving Italian secondary education increased from 22,840 to 29,814, and those from professional and upper middle class fell slightly from 67.5 to 65.9 per cent. Even in Sweden and the United States, where participation in upper secondary and higher education had expanded rapidly, social inequalities continued. In 1960, manual workers made up more than half the Swedish labour force but their children represented less than a quarter of gymnasium admissions, and only one in six of university students. The United States experience shows that a vast expansion in enrolment does not eliminate class differences: a 1950 estimate concluded that 40 per cent of those whose parents were in the professional classes compared with 6.8 per cent in the manual working classes were likely to graduate from the university.

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[1] The figures include certain groups *not* included in Group I, Table 13.

The extent to which inequalities in sex, region and class overlap and reinforce each other has been examined in a study by the Netherlands. Table 46 shows a breakdown of participation in the first grade of grammar school from 1949 to 1957, by sex and region.

TABLE 46. NETHERLANDS: ENTRANTS TO GRAMMAR SCHOOL AS A PERCENTAGE OF 12 YEAR OLDS, BY SEX AND REGION[1]

	RURAL			SMALL TOWN			BIG TOWN		
	1949	1952	1957	1949	1952	1957	1949	1952	1957
Boys	4.1	5.7	9.3	13.9	14.7	19.1	17.0	19.0	23.3
Girls	2.1	3.5	5.4	8.4	10.9	15.4	12.2	14.0	17.7

[1] Data from *Educational Policy and Planning : Netherlands*, OECD, 1967, Table 9, p. 62. Two additional regions, " urbanised rural " and " dormitory ", listed in the original table, have not been included here.

These results are consistent with those presented earlier. The study attempted to discover how far regional differences (in the table analysed by degree of urbanisation) were related to social characteristics (especially per capita income and labour force characteristics). The Netherlands was divided into 18 regions according to educational participation, and a multiple correlation exercice was carried out concerning social, regional and educational characteristics. The conclusion was that " regional differences in grammar school participation are determined by differences in occupational distribution ". This problem exists in most countries, although unfortunately the information is not available for similar exercises to be carried out in all countries. Problems of social inequality in education cannot be alleviated, however, by stating the regional problem in occupational terms.

It is important that the difference between " wider " and " more equal " participation in upper secondary education is clearly recognized. The fact that more young people obtain leaving certificates from upper secondary schools does not mean narrower disparities in educational participation. Enrolment ratios have increased considerably in Europe but more democratic participation has had only a limited effect. In some countries, and at some levels, education has become more democratic: for example, in Sweden between 1947 and 1961, the percentage of university entrants with a manual working class background increased from 8 to 14 per cent of all entrants. This is exceptional, however, and it is more frequent to find a continuation of inequality in enrolments and stability in class differentials than any narrowing. It is important, therefore, to distinguish between expansion in enrolments and democratisation of participation.

SUMMARY

The general conclusions based on an analysis of statistical data may be summarised as follows:

a) The expansion in secondary education enrolments concerns both its upper and lower sections, and most of its types and branches. Academic, non-academic, general and technical have all expanded in absolute numbers in most countries and, in many, the proportion of the age-group enrolled in them has also risen. The streams and systems with the largest increases are not the same in all countries but, in general, wider participation in secondary education affects all types and has little relation to their particular objectives. It is stronger in some courses than in others, and we should consider how far the trend towards wider participation is susceptible to planning, in view of the difficulties experienced in narrowing regional and social differentials, and the extent to which expansion has taken place in streams other than those required by the economy.

b) Any interpretation of the statistical data must take into consideration the particular conditions of the country concerned. Although the educational structures and statistical methods of Member countries differ too much to allow systematic comparative analyses, the extension of secondary education to include an increasingly high percentage of the age-group up to late adolescence, and the probable enrolment of most youngsters up to 18 in some type of secondary education, are fairly general tendencies which neither the variety of structures nor limitations of statistics can disguise. In turn, this expansion is bringing about a gradual decrease in the differences between OECD Member countries in enrolment rates, for, expansion has been greater in the educationally " less developed " countries than in the more developed. The persistence of drop-outs, repeaters, regional and class inequalities shows that educational expansion still has a long way to go before the democratisation of secondary education is achieved.

Table 47. ENROLMENTS IN PRIMARY, SECONDARY AND HIGHER EDUCATION IN OECD COUNTRIES

Austria	*1951/52*	*1955/56*	*1960/61*	*1965/66*
Primary	469,156	427,019	411,673	484,774
Secondary	563,269	611,843	600,361	600,648
Higher	20,710	19,124	38,533	48,895
of which: foreigners	n.d.	4,315	10,374	9,438
Belgium	*1952/53*	*1955/56*	*1960/61*	*1964/65*
Primary	753,503	849,284	918,822	967,124
Secondary	361,895	390,863	525,431	620,475
Higher	35,033	38,393	51,999	75,468
Canada	*1951/52*	*1955/56*	*1960/61*	*1964/65*
Primary	2,230,000	2,726,762	3,319,450	3,700,070
Secondary	394,000	608,683	882,247	1,263,725
Higher	n.d.	72,737	113,864	178,238
Denmark	*1951/52*	*1956/57*	*1961/62*	*1965/66*
Primary	457,163	529,379	547,683	519,279
Secondary	98,171	134,861	139,193	158,931
Higher	19,946	22,797	33,275	50,493
Finland	*1950*	*1955*	*1960*	*1965*
Primary	438,017	532,353	544,652	460,012
Secondary	173,685	226,635	343,198	425,875
Higher	13,885	16,302	23,552	41,994
France	*1950/51*	*1954/55*	*1959/60*	*1964/65*
Primary	4,134,400	4,892,500	5,809,100	5,602,350
Secondary	1,055,648	1,613,900	2,173,648	3,110,661
of which: part-time	n.d.	137,900	163,200	49,800
Higher	145,865	152,246	214,672	367,000
Germany	*1950*	*1956*	*1959*	*1965*
Primary	n.d.	2,935,117	3,095,465	3,453,245
Secondary (including upper primary and part-time)	n.d.	5,610,353	5,246,239	5,571,753
Secondary (excluding upper primary)	2,680,276	3,640,754	3,269,069	3,459,669
Secondary (excluding upper primary and part-time)	981,047	1,371,479	1,438,882	1,679,625
Higher I (University only)	116,896	150,165	202,321	266,648
Higher II (all higher)	246,090	332,795	408,616	512,208
Greece		*1955/56*	*1960/61*	*1963/64*
Primary	n.d.	947,631	895,887	911,735
Secondary	n.d.	209,802	327,779	377,205
Higher	n.d.	21,639	28,302	43,411
Japan	*1950*	*1955/56*	*1960/61*	*1965/66*
Primary	11,178,003	12,266,952	12,590,680	9,775,532
Secondary	7,267,633	8,475,693	9,125,918	11,030,689
Higher	235,883	609,963	711,618	1,107,327
Italy	*1951/52*	*1955/56*	*1960/61*	*1965/66*
Primary	4,443,168	4,740,738	4,417,544	4,523,699

Continued on the following page →

TABLE 47. (*Cont.*)

Secondary	1,220,566	1,507,968	2,184,046	3,014,478
Higher	221,850	206,787	260,961	362,065
Ireland	*1950*	*1955*	*1960*	*1965/66*
Primary	497,593	500,894	503,218	506,225
Secondary	73,225	86,835	111,197	145,828
Higher	8,351	9,481	12,405	17,910
Luxembourg	*1950/51*	*1955/56*	*1960/61*	*1962/63*
Primary	29,117	28,767	31,684	33,346
Secondary	7,325	8,009	10,508	11,253
				1965/66
Higher	99	81	151	408
Netherlands	*1950*	*1955*	*1960*	*1964*
Primary	1,248,698	1,495,778	1,470,264	1,458,583
Secondary	582,372	740,340	1,050,430	1,130,274
Higher	29,736	29,642	40,727	58,361
Norway	*1951/52*	1955/56	*1960/61*	*1965/66*
Primary	337,420	419,700	436,306	428,679
Secondary	84,771	100,646	143,420	179,734
Higher	7,000	5,600	9,600	19,637
Portugal	*1950/52*	*1955/56*	*1960/61*	*1964/65*
Primary	633,937	830,607	887,235	872,000
Secondary	89,402	125,074	220,782	291,000
Secondary (including intermediate and primary teacher training).	94,972	130,438	228,964	n.d.
Higher	16,152	18,838	24,060	29,000
Spain	*1950/51*	1955/56	1960/61	*1964/65*
Primary	2,780,145	3,373,856	3,387,350	3,768,729
Secondary	386,723	506,183	714,349	1,121,750
Higher	54,605	61,167	76,458	112,541
Sweden	*1952/53*	*1955/56*	*1960/61*	*1964/65*
Primary	730,441	817,379	843,292	867,380
Secondary	174,684	205,819	285,147	275,165
	(1950/51)			
Higher	16,887	22,647	36,909	59,643
Turkey	*1950/51*	*1955/56*	*1960/61*	*1965/66*
Primary	1,616,626	1,983,668	2,866,501	4,432,000
Secondary	146,900	242,900	467,500	721,500
Higher	24,815	37,000	65,297	97,300
United Kingdom (England and Wales)		*1955/56*	*1960/61*	*1963/64*
Primary	n.d.	4,713,789	4,301,718	4,432,556
Secondary	n.d.	1,914,814	2,723,158	2,829,747
Higher	n.d.	106,000	151,100	n.d.
United States	*1950/51*	*1955/56*	*1960/61*	*1965/66*
Primary	14,672,000	17,827,000	1,980,500	21,655,000
Secondary (Public only)	9,363,000	11,760,000	14,354,000	18,200,000
Higher	2,296,592	2,678,623	3,610,007	5,570,271

Continued on the following page →

TABLE 47. *(Cont.)*

Yugoslavia	*1952/53*	*1955/56*	*1960/61*	*1964/65*
Primary	1,103,877	1,039,000	1,707,574	1,670,775
Secondary (including upper primary)	513,203	632,618	1,410,374	1,895,157
Secondary (excluding upper primary)	234,237	265,318	350,147	566,346
Higher	45,041	58,181	94,769	106,050
Switzerland	*1951/52*	*1956/57*	*1961/62*	*1964/65*
Primary	476,331	557,406	577,055	n.d.
Secondary	90,866	124,839	138,450	n.d.
	1950/51	*1955/56*	*1960/61*	
Higher	16,501	17,881	24,648	34,846

GLOSSARY TO TABLES 47 AND 1

AUSTRIA:

Primary: Grades 1-4 *Volksschulen* (Primary) and 1-4 *Sonderschulen* (special education).

Secondary: Includes enrolments in all types of schools from grade 5 upwards. This implies that grades 5-8 of the *Volksschulen*, grades 5-8 of the *Sonderschulen*, all grades of the *Hauptschulen* (short general secondary school) are included with secondary education.

For what concerns the definition of *higher education*, the *Oesterreichische Schulstatistik* (annual educational statistics publication) has been followed.

BELGIUM:

Secondary education: Defined as in Belgian educational statistics publications. The " sections générales et préparatoires " are included with higher education.

In the secondary enrolment figures artistic education data have not been included. In the 1952-53 figure teacher training enrolments are also excluded.

CANADA:

Data include full-time enrolment in publicly controlled, private and federal schools.

Secondary enrolments: Include grades 9 and upwards, except for Quebec where grade 8 is included with secondary.

DENMARK:

Primary: Includes grades 1-7 and *Mellem* school grades 1 and 2, before 1962 also non-exam pupils.

Secondary: Includes general secondary only: *Gymnasium*, *Realskola*, *Mellem* (exam only), grades 3-10. It has not been possible to use exactly the same definitions for secondary for all years, mainly because the school reform has gradually eliminated the *Mellem* school and as from 1962 only grades 8-10 of what was formerly a 10-year school have been maintained.

Higher: Includes *Kobenhavns universitet*, *Arhus universitet*, *Laereanstalterne* (teacher training institutes), *Handelshogskolerne* (commercial colleges), *Musikkonservatorierne*, *Seminarnierne*, *Teknika*.

FRANCE

Primary: Includes grades 1-5 of primary schooling, the " classes primaires du second degré " (primary classes in secondary schools), the " classes de fin d'étude et terminales du premier degré " (terminal primary classes in lower secondary).

Continued on the following page →

TABLE 47. (*Cont.*)

Secondary: Definition as in French school statistics. Not included are: vocational education in the CET (Collèges d'Enseignement Technique); the technical course in the "second cycle long" (lycées); private enrolments in technical schools at the lower secondary level; the "préparation aux grandes écoles".

Higher: Includes university only.

GERMANY:

Primary: Includes *Grundschule* (grades 1-4 of the 8-9 year primary school) only.

Secondary includes: *Realschulen, Gymnasia, Berufsfachschulen* and *Berufsaufbauschulen.* For 1950-51 enrolments in the *Oberstufe* (grades 5-9) of the *Volksschulen* (primary schools) are not included.

Higher: Figure I includes universities only, Figure II all institutions of higher education (incl. *Ingenieurschulen*).

FINLAND:

Definitions as in national educational statistics. However, "higher" includes all institutions of higher education except for Military Colleges.

IRELAND:

Definitions as in national statistics.

ITALY:

Definitions as in national statistics. *Scuola media* enrolments (Middle school, grades 6-8) are included with secondary.

JAPAN:

Secondary: Does not include "advanced course" or "special course".

Higher: Includes all institutions of higher education (universities, junior colleges, technical colleges), advanced course enrolments and short-term course enrolments. However, the two latter categories are not included with the 1950/51 data.

LUXEMBOURG:

Primary: Included are also grades 7-9 of private "classes complémentaires".

Secondary: Includes private and public *lycées*, special school pupils, technical and vocational schools, public and private primary teacher training.

Higher: Includes only students studying in Luxembourg.

NETHERLANDS:

Primary: Includes *Gewoon lager onderwijs* and *Buitengewoon lager onderwijs.*

Secondary: Included are, apart from all general and technical secondary: *Voortgezet gewoon lager onderwijs* (continued primary), *Uitgebreid lager onderwijs* (short general secondary), *Opleiding tot kleuterleidster* (nursery teacher training) and *Kweekschoolonderwijs* (primary teacher training). Not included is *Sociaalpedagogisch onderwijs.*

Higher: University-level enrolments (*Wetenschappelijk onderwijs*) only.

NORWAY:

Primary: Pupils in grades 1-7 of the continuation school are not included.

Secondary: Enrolments in people's high schools ("Folk high schools") not included.

Higher: Includes universities only.

PORTUGAL:

Definitions as in national statistics and in MRP Report.

Continued on the following page →

SPAIN:

Primary: Enseñanza primaria.
Secondary: Enseñanza media general, *Istitutos tecnicos de enseñanza media, Centros de formacion profesional industrial, Enseñanzas artisticas, Enseñanzas de comercio, Enseñanzas del magisterio, Enseñanzas tecnicas de grado medio* (the latter in national statistics with higher education as from 1964, but here systematically registered with secondary).

SWEDEN:

Primary: Old and new primary and " higher elementary ".
Secondary: Includes only : middle school, girls school, *gymnasium* (general, technical and commercial), vocational schools (only full-time of minimum 5 months duration), teacher training (middle and junior). (*Folkskola* excluded from all data).
Higher: All institutions of higher education, university and non-university.

SWITZERLAND:

Secondary: Includes general secondary only.

UNITED KINGDOM:

Secondary: Full-time pupils only. Includes " grammar ", " modern ", " technical ", " comprehensive " and " others ".
Higher: All institutions at higher education level. All data concern England and Wales only.

UNITED STATES:

Primary: Public only, up to grade 6 included.
Secondary: Public only, from grade 7 upwards.

YUGOSLAVIA:

Primary: Grades 1-4 of the 8-year primary school.
Secondary: Two definitions have been used, one including grades 5-8 of the 8-year primary school, the second excluding these pupils.
Higher: Full-time students only.

⁂

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Table 48. NORWAY: CHANGES IN REGIONAL INEQUALITIES IN ENROLMENT RATES IN GYMNASIA (1958-1964)

REGIONS[1]	ENROLMENT RATE 1st YEAR GYMNASIUM			
	1958/59		1964/65	
Oslo	34.4	21.6	34.7	29.9
Akershus	19.9		26.5	
Bergen	18.2		38.1	
Telemark	18.1		24.7	
Aust-Agder	17.4		25.5	
West-Agder	16.2	14.9	26.5	21.9
Ostfold	15.4		21.8	
Sör-Trondelag	13.8		19.5	
Rogaland	13.1		21.2	
Buskerud	13.0		20.4	
Vestfold	12.7	10.0	17.4	17.7
Hedmark	10.4		19.4	
More og Romsdal	9.2		16.5	
Oppland	8.9		21.2	
Troms	8.8		11.1	
Sogn og Fjordane	8.3	6.8	11.5	14.0
Nord-Trondelag	8.0		15.8	
Nordland	7.4		15.1	
Hordaland	6.7		15.0	
Finnmark	4.0		12.5	
Norway Total	14.1		21.6	

1. "Region" means region in which the pupil goes to school, not the region of his home residence.

Source: Undervisningsstatistikk (several years).

TABLE 49. FRANCE: CHANGES IN REGIONAL INEQUALITIES IN ENROLMENT RATES IN FIRST-YEAR SECONDARY (1954-1962)

PROGRAMME AREAS	ENROLMENT RATIO 1st YEAR SECONDARY				GROWTH 1954-62 IN % (1954 = 100)
	1954/55		1962/63		
	REGION	AVERAGE	REGION	AVERAGE	
Paris	56	46	66	64	118
Provence	47		68		143
Languedoc	45		65		145
Bretagne	45		65		146
Auvergne	42		60		145
Limousin	40		59		146
Rhône-Alpes	40	37	61	58	154
Franche-Comté	38		60		157
Midi-Pyrénées	38		63		166
Nord	34		53		156
Aquitaine	34		52		150
Lorraine	32	30	48	49	151
Champagne	31		46		150
Bourgogne	31		53		168
Poitou-Charentes	29		48		167
Centre	28		49		171
Alsace	27	26	47	45	175
Picardie	26		44		170
Normandie-Nord	26		42		162
Normandie-Sud	26		47		179
Loire	26		45		175
FRANCE	38		56		148

Source: Social Objectives in Educational Planning, OECD, 1967, Annex 1.

TABLE 50. SPAIN: BREAKDOWN OF GENERAL SECONDARY CERTIFICATED LEAVERS (Madurez) BY REGION (1956 = 100)

REGION	1956/57	INDEX	1960/61	INDEX	1962/63	INDEX
Barcelona	1,333	100	1,992	149	2,707	203
Granada	717	100	878	122	1,128	157
La Laguna	295	100	395	134	468	159
Madrid	3,920	100	8,659	221	5,815	148
Murcia	560	100	598	107	667	119
Oviedo	1,098	100	692	63	1,147	104
Salamanca	510	100	601	118	733	144
Santiago	778	100	763	98	1,403	180
Sevilla	1,009	100	1,015	101	1,167	116
Valencia	746	100	886	119	1,089	146
Valladolid	1,065	100	2,128	200	1,875	176
Zaragoza	870	100	1,135	130	1,257	144
Total	12,901	100	19,742	153	19,456	151

Source: Estadistica de la Enseñanza media en España. Various years.

TABLE 51. ITALY: LYCÉE CERTIFICATED LEAVERS BY REGION

IN ACTUAL NUMBERS

(1955 = 100)

REGION	1955/56	INDEX	1960/61	INDEX	1963/64	INDEX
Piemonte	1,480	100	1,775	120	1,801	122
Valle d'Aosta	20	100	31	155	34	170
Liguria	1,102	100	1,325	120	1,276	116
Lombardia	2,659	100	3,240	122	3,413	128
Trentino-Alto Adigio	277	100	430	155	385	139
Veneto	1,133	100	1,486	131	1,668	147
Friuli-Venezia Giulia	504	100	695	138	624	124
Emilia Romagna	1,649	100	1,988	121	1,902	115
Marche	531	100	786	148	798	150
Toscana	1,429	100	1,709	120	1,699	119
Umbria	391	100	486	124	541	138
Lazio	3,668	100	4,609	127	5,093	139
Campania	2,818	100	3,913	139	3,965	141
Abruzzi			646		833	
	770	100	868	113	1,061	138
Molise			222		228	
Puglia	2,254	100	2,582	115	2,920	130
Basilicata	122	100	164	134	203	166
Calabria	970	100	1,250	129	1,261	130
Sicilia	3,329	100	3,707	111	4,315	130
Sardegna	564	100	914	162	1,185	210
Total	25,670	100	31,958	124	34,144	133

Source: Annuario dell'Pubblica Istruzione Italiana. Various years.

TABLE 52. FRANCE: BREAKDOWN OF "BACCALAURÉAT" HOLDERS (ACADÉMIES) BY REGION
(1954/55 = 100)

REGION	1954/55		1960/61		1965/66	
	NUMBER	INDEX	NUMBER	INDEX	NUMBER	INDEX
Aix	3,108	100	4,989	161	7,682	247
Amiens	—	—	—	—	2,272	—
Besançon	789	100	1,329	168	2,066	262
Bordeaux	2,149	100	3,375	157	4,557	212
Caen	1,940	100	3,398	175	3,084	159
Clermont	1,581	100	2,377	150	3,527	223
Dijon	914	100	1,370	150	2,584	283
Grenoble	1,620	100	3,192	197	4,363	269
Lille	3,028	100	4,841	160	6,534	216
Lyon	2,061	100	3,839	186	5,197	252
Montpellier	1,558	100	2,742	176	3,916	251
Nancy	1,104	100	1,631	148	2,577	233
Nantes	—	—	—	—	2,531	—
Orléans	—	—	—	—	3,059	—
Paris	10,255	100	14,265	139	21,197	207
Poitiers	2,043	100	2,929	143	3,558	174
Reims	—	—	—	—	2,003	—
Rennes	3,172	100	4,600	145	5,066	160
Rouen	—	—	—	—	1,756	—
Strasbourg	1,722	100	2,702	157	3,637	211
Toulouse	2,214	100	3,802	172	5,758	260
Total	39,258	100	61,381	156	96,924	247

Source: Informations Statistiques (various years).

TABLE 53. GERMANY: BREAKDOWN OF SECONDARY CERTIFICATED LEAVERS 1950-1965, BY REGION
(Abiturienten)

LÄNDER	1950	INDEX	1955	INDEX	1960	INDEX	1965	INDEX
Baden-Würtemberg	4,299	91	4,711 (1956)	100	7,487	159	5,370	114
Bayern	5,402	96	5,644	100	8,789	156	7,100	126
Berlin (West)	1,965	68	2,916	100	3,174	109	1,630	56
Bremen	459	64	716	100	923	129	750	105
Hamburg	1,081	78	1,394	100	1,515	109	1,290	93
Hessen	2,905	91	3,177	100	5,912	186	4,570	144
Niedersachsen	3,765	92	4,109	100	6,865	167	5,760	140
Nordrhein-Westfalen	8,194	82	9,966	100	13,685	137	11,210	112
Rheinland-Pfalz	1,671	92	1,819	100	2,725	150	2,450	135
Saarland	345	79	434	100	660	152	680	157
Schleswig-Holstein	1,130	68	1,664	100	2,628	158	2,120	127
Total (incl. Berlin-West)	31,216	85	36,550	100	54,363	149	42,930	117

Source: Abiturienten und Studenten: Entwicklung und Vorschätrung der Zahlen 1950 bis 1980, Wissenschaftsrat, 1966.

II

INCREASED PARTICIPATION: STRUCTURAL AND QUALITATIVE IMPLICATIONS

INTRODUCTION

In such a complex development as the evolution of secondary education, the quantitative and qualitative elements are intrinsically linked, as are also the social, economic and political influence which help mould the system. An over-simplified approach must therefore be avoided, for example, that of considering the number to be educated and the types of education to be provided purely as a function of the economy's need for a regular supply of persons with particular sets of skills. This would be a distortion of the relationship between society and education for, other socio-political factors, influence what is taught in the schools and the number of students, and various general educational principles, independent of economic considerations, help shape the structure and content of education. The matter is made more complicated because the mixture of social, political, economic and educational influences is not the same for each level of education (primary, secondary, higher) or for each type of training (academic, vocational, technical, etc.). The progress made by science and technology and the results of educational research have important consequences for the " what " and " how " of teaching, and education in its turn is one of the main elements which determine the progress of science and technology. As a result of this multiplicity of influence, what at first sight seems to be a clear cause-effect relation appears, when looked at in more detail, to be a complex interaction process, with the educational system exerting considerable pressure on the socio-economic system which had seemed to be moulding it. A study of the education process with the objective of defining the part played by each of the variables concerned in the process of change, can as yet yield only limited results. The development of education is no longer left to the interplay of a multiplicity of social and economic forces, but has become one of the principal concerns of national politics. To an increasing extent, educational policy is based on rational educational planning. But, educational planning having overcome its teething troubles, the interaction between policy and planning has become much more sophisticated. Moreover, the short experience which countries have acquired in translating planning targets into policy objectives and in applying these policies to educational practice allows one to measure the limits of the influence of planning and policy on the educational reality.

This report attempts to determine the impact which educational policy and planning has had on the recent development of secondary education. Our analysis will concentrate on the interaction between quantitative expansion and qualitative changes, and on their impact on structure, curricula, teaching methods and teaching techniques, evaluation of criteria and, finally, orientation and guidance techniques. Our principal argument will be that, qualitatively, " secondary education for all " (which is becoming a reality throughout the OECD area) is necessarily different from " secondary education for a selected group " (which was characteristic not so many years ago, and in some ways is still true of many secondary education systems).

There are different ways in which problems concerning structure, methods and curricula, which arise in the mass expansion of secondary schooling, can be met. The many methods and devices used in the OECD area will be described and analysed in some detail. Our main argument will be that each of these variants leads inevitably to its own consequences, and that mass participation sets limits to the structures and qualitative features of secondary education, limits beyond which the essential objectives of educational expansion cannot be attained. As a result, the increased resources allocated may well be wasted.

There are two major limitations to this type of analysis:

a) Most of the changes in educational policy in OECD Member countries are too recent for definite conclusions to be drawn concerning their value. The results of certain structural changes such as those made to the Swedish school system are beginning to appear, and the French *cycle d'observation* is being continuously re-adjusted as a result of the experience acquired, so that, for such changes as these, there is sufficient information to provide an initial impression of their effectiveness. But little can be said as yet concerning the effects of the unified *scuola media* in Italy, or the " bridge year " in the Dutch secondary schools of the " second path " secondary schools (*Zweiter Bildungsweg*) in Germany, where policy implementation is still in its earliest stages.

b) Few of the qualitative modifications to secondary education in OECD Member countries have been systematically evaluated or followed up. Adaptations and re-adaptations have often been made on the basis of partial information and on general social and political grounds. It is not suggested that educational policy should — or even could — be based entirely on the results of research, or that basic educational changes should first be tested in laboratory-like pilot experiments to make sure they are fool proof. The part played by research and evaluation in the recent changes made to secondary education in most OECD Member countries has been comparatively slight, but is becoming more important. In the few cases where such information was available, educational policy-makers apparently found it useful; for example, the lower secondary education reform in Sweden and changes made to French lower secondary education, and the growing use of forecasting in educational planning in many countries.

Changes in the development of secondary education in OECD Member countries over the past 15 years may be grouped under three main heading:

a) A large increase in the number of young people in secondary education. (See previous chapter showing the size of expansion and the level or type of schooling in which it occurred).

b) Until recently, compulsory schooling for all children was restricted to elementary education; in many countries, this has now been extended to include adolescence, and the age at which pupils are streamed has been raised.

c) The selection of pupils for particular types of secondary education is one of the main problems facing present-day educational policy, and a key issue in the structural changes to secondary education. This is partly a question of timing, partly of criteria and partly of ensuring that decisions are not irreversible.

There is a close link between these problems: the prolongation of compulsory schooling implies postponement of streaming, whereas the introduction of more adequate streaming procedures has led to a prolongation of common schooling in one form or another. As a result, two alternative solutions have been adopted concerning the effect on secondary education structure:

— the introduction of *common curricula* for the first year(s) of all or most secondary schools and, eventually, the creation of easier transfer possibilities between the various streams; the different types of secondary schools, however, remain separate and parallel;

— the introduction of " *comprehensive* " systems of secondary education for the age group 10/11 to 14/15, the word " comprehensive " in this context being used in a variety of ways, but with a common denominator of " being together " for all children in one and the same school and/or in one and the same type of educational course.

In some countries, the American-style system of common schooling throughout the secondary period has been adopted. In some schools " comprehensive " may mean a uniform curriculum and common schooling in the same class, in others, a gradual streaming into separate " sections " or " options " for all or part of the teaching time. Another variation is ability-streaming, which is similar to the system of parallel options or sections, and may imply the use of different syllabuses for the various streams.

Many solutions do, in fact, show characteristics of several of these variations, or even of both main alternative solutions, so that it has become difficult to determine where the " parallel " type ends and the " comprehensive " begins. But, more important than the classification into one or other of these groups, is the existence of a common trend and a common objective, i.e. common both to " comprehensive " systems and to those where parallel schools continue to exist, but where transfer facilities between them have been created: the postponement of irreversible decisions until the pupils' aptitudes and interests have developed sufficiently to allow these decisions to be taken on the basis of valid information and criteria.

One of the great contributions made by psychological and educational research in the recent past is to demonstrate that these aptitudes and interests can mature only under favourable conditions, or in other words, only if the school curricula and teaching approach offer pupils a choice allowing them to develop and gradually discover their interests and aptitudes, and if, on the basis of this, decisions concerning further curriculum choice can be taken gradually during the pupil's school career. The vital importance of adequate information, orientation and guidance in this decision-making process is now generally recognised. These concepts concerning choice of curricula are obviously not compatible with a premature and/or irrevocable entrance examination procedure. The old streaming methods must progressively be replaced by a system of orientation, guidance and streaming within the secondary school.

In practice, the policies of OECD Member countries are influenced by various considerations of a general nature, so that differences arise in implementing the ideas outlined above.

Member countries realise that, if full educational opportunities for all are to become a reality, they must adapt their policies for admission, selection and streaming—and consequently the very structure of their secondary school systems—to the new conditions of mass participation, whether these have already materialised, are imminent, or are expected in the future.

I. IMPLICATIONS OF INCREASED SECONDARY SCHOOL PARTICIPATION

It was the combined need to create (*a*) a system adapted to mass participation and (*b*) conditions for full educational opportunity, that called for a revision of secondary education structure. The fact that the young people for whom the syllabuses of selective general secondary schools had traditionally been prepared were now out-numbered by those with a different social background made more obvious the strong bias which the curricula, teaching methods and ultimately, the built-in value systems which the different types of school had acquired over the years. Such social and cultural biases as these proved to be obstacles to the successful integration of large numbers of the new types of children, particularly into " academic " general secondary schools. They also hindered the setting up of a more flexible structural relationship between parallel types of secondary schooling, and the easy transfer between the various programmes. This was particularly true of the many countries where, until very recently, a selective secondary educational system co-existed with one of compulsory primary education. The increased participation in education beyond the elementary schooling, has created difficult syllabus problems at post-elementary level in these countries. The system of two parallel courses, one academic and selective catering for the needs of a social and/or an intellectual elite, the other terminal—providing either a general or a technical-vocational programme—catering for a larger group of presumably lower intellectual standard and social class, becomes increasingly inadequate in view of the educational objective of full opportunity for all available talent.

The differences in curricula between the various types of secondary school are the most obvious, though not the only and perhaps not even the most powerful, limitations to educational flexibility. The importance of classical languages in the traditional " academic " courses makes virtually impossible the later transfers to them of pupils from streams without these languages. More subtle differences, such as the timing and amount of instruction in modern foreign languages or in science, and differences of approach or in curricula which are apparently identical, may constitute a formidable obstacle to pupil transfer.

A further obstacle arises as a result of the differences in the methods of recruiting and training teaching staff: in academic secondary schools, teachers are usually university-trained and take specific subjects: in upper primary and often in the non-academic general secondary schools, they are class teachers, trained in secondary or post-secondary level teacher training institutes. The teacher's own training governs the level and the type of his teaching; its more practical or more theoretical orientation, its deductive or empirical approach, the importance it attaches to the mastering of facts rather than the development of a style of thinking, or vice versa. The teacher's attitude towards certain educational or career choices, or towards the possibility of working-class youngsters succeeding in an academic career, is likely to be strongly influenced by his own social and educational brackground.

Several OECD countries have become aware of the difficulties such factors constitute in any attempt to obtain greater flexibility in secondary school structures, which would make choices as to the type of school less definitive and transfers of pupils between them easier. Many countries have learned by experience how difficult it is to make this flexibility within a parallel school system effective. This applies, for example, to the early years of the grammar and modern schools in England and Wales; the upper stage of primary school (*Hauptschule*) and the academic general secondary school (*Gymnasium*) in Austria; the non-academic general secondary school (*Realschule*) and the *Gymnasium* in Germany, and the relationship between the " non-academic " and the " academic " general secondary schools (ULO and VHMO) in the Netherlands. The " cycle d'observation " in France amply demonstrates the tenacious differences of all kinds between the *Lycées*, the *Collège d'enseignement général* and the *cours complémentaires*.

The radical solution adopted by Italy, Norway, Sweden and Yugoslavia —and already practised, though in a different way, in the United States, parts of Canada and Japan—consisting of an amalgamation of all syllabuses at junior secondary level, has the great advantage of breaking away from the influence exerted by the tradition and prestige of the several parallel junior secondary syllabuses and offering an entirely new type of school for the entire age-group. Although this solution creates its own resource and implementation problems, it is certainly the most interesting and radical attempt to deal with the new needs created by wider participation in secondary education, and by the quest for full educational opportunities for all.

a) COMPULSORY SCHOOLING: LEGISLATION AND PRACTICE

Table 54 shows the number of years of compulsory schooling in OECD countries in the middle 1950's, 1960's and (where known) 1970's. It shows quite clearly that, with the possible exception of Portugal and Turkey, compulsory education extends, or will soon extend, into adolescence and overlaps what has traditionally been considered as upper secondary education. By the end of the 1960's, at least five countries will have compulsory schooling up to the age of 16 (France, Norway, Sweden, the United Kingdom and most parts of the United States) the school-leaving age will be 15 in at least eight more countries (Austria, Germany, where three more years of part-time education are compulsory, Japan, Iceland, Ireland, Italy, Spain, Yugoslavia and most Canadian provinces). In many parts of the federal system of Switzerland, the school-leaving age is already 15, and is 14 in the rest.

TABLE 54. NUMBER OF YEARS' COMPULSORY SCHOOLING, AND STARTING AGE IN PRIMARY SCHOOL

COUNTRY	NUMBER OF YEARS' COMPULSORY SCHOOLING			STARTING AGE OF ENTRANCE IN PRIMARY SCHOOL
	1955	1965	1975	
Austria	8	9	—	6
Belgium	8	8	—	6
Canada	7-9	7-9	—	5-6
Denmark	7	7	—	7
France	8	8	10	6
Finland	6	8	—	7
Germany	8 (+ 3)[1]	8-9 (+ 3)[1]	9 (+ 3)[1]	6
Greece	6	6-9	9[2]	6
Iceland	8	8	—	7
Ireland	8	8	9-10	6
Italy	8	8	—	6
Japan	9	9	9	6
Luxembourg	—	9	—	6
Netherlands	8	8	—	6-7
Norway	7	7-9	9	7
Portugal	4	4	6	7
Spain	6	8	8	6
Sweden	8	9	9	7
Switzerland	8-9	8-9	—	6-7
Turkey	5	5	8[2]	6
United Kingdom	10	10	11	5
United States	8-9	8-12	—	6
Yugoslavia	7	8	8	7

1. Part-time in " Berufsschulen ".
2. Planned, but decision not taken yet.

Sources: School Systems: A guide, Council of Europe, Strasbourg, 1965.
UNESCO World Survey of Education, Vol. II.

The existence of an act making education compulsory until a particular age does not, however, ensure its implementation. Although in nearly all the North-west European Member countries almost 100 per cent of the children stay until the legal leaving age, even in some of these highly developed countries, in recent years some children have been leaving before the legal date. The situation is very different in several of the Mediterranean countries. In Yugoslavia, where the legal minimum leaving age is 15, only 64.7 per cent of the 11-14 year olds were in school in 1961. Since then, the proportion has been increasing rapidly, and attained 76.3 per cent in 1965.[1] In Italy, in 1959/60, 65.6 per cent of the 12-13 year olds were in school; in 1964/65 this percentage had increased to 85.6[2]; full scholarisation until 14 will be attained only in the 1970's. Portugal, where the minimum number of years at school has recently been raised from four to six, expects to take a long time before this measure can be fully implemented. In the late fifties, not one in two of the twelve-year-olds, and only a quarter of the thirteen-year-olds, were in school. Turkey still has a long way to go before its Act on compulsory schooling is fully implemented; in 1963, only 73 per cent of the population of primary school age were attending school, in 1966 the percentage was estimated at 84 and is expected to be 100 in 1971.[1] Drop-outs probably occur among the older children and in certain parts of the country.

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[1] See " The Development of Education in Yugoslavia in the period 1966-1970 and its, Adaptation to the Needs of the Economy and Society ", OECD, mimeographed document DAS/MRP/66.2, Table 13.

[2] Unpublished data.

This bears out the theory advanced in the preceding chapter that compulsory schooling legislation is more difficult to enforce in the poorer countries with a high proportion working in agriculture: but, the problem is, in fact, much more complicated. The fact that children are registered at school does not mean they actually attend over the whole school year. Statistics provide no reliable information on prolonged absences for parts of the year[2], although temporary " drop-out " of this type is liable to be high in work-intensive, family-run farms in agricultural areas in Spain, Portugal, Turkey, Southern Italy and parts of Greece. And, because of the distance from school, lack of suitable transport, etc., the children in these same countries were often registered at school only one or two years after the official age.

Even so, in several of the Mediterranean countries compulsory school enrolment has increased in a very short time from under 50 per cent of the age-group to about 80 or 90 per cent. Schools at the upper primary or lower secondary level had to be made available in a very short time, in reply to a fast-growing need. Yugoslavia faced this problem in the rural parts of Bosnia and Macedonia where only 4-year elementary schools existed but where 8-year schools had to be rapidly provided for a quickly increasing school population. Portugal is still trying to provide facilities for the 6-12 instead of the 6-10 age-group and will have achieved this only by 1975. Italy, after 1961/62, made a remarkable effort to establish new middle schools (*scuola media*) in the communities with over 3,000 inhabitants, as laid down by the Act of 1962. The number of communities with middle schools rose from 3,834 in 1961/62 to 5,031 in 1965/66, and that of communities with over 3,000 inhabitants with no middle school fell from 528 in 1961/62 to 84 in 1965/66.[3]

b) THE SCHOOL LEAVING AGE

In the industrialised countries, where compulsory education is almost fully enforced, a new problem concerning those leaving school at an early age is now arising: the integration into the labour market of youngsters who have not completed any course of secondary education. In areas where industrialisation is just beginning, unskilled or semi-skilled jobs may incite children to leave school at the end of the compulsory schooling age without completing the secondary course they have started. In addition, the selectivity of secondary school systems, and their inability to retain those pupils who, for all kinds of reasons, do not perform their work satisfactorily, make the labour market more attractive. In highly industrialised areas, on the contrary, unskilled or semi-skilled jobs become rarer so that the labour market incentive to leave school early is low. In addition, labour laws may restrict the employment of young people in this type of work by limiting night and weekend work and the amount of overtime. The unemployment of school drop-outs in the United States, and now to an increasing extent in several industrialised European countries, is the consequence of these circumstances. The unemployment of young, unqualified school drop-outs calls for further study and for a better co-ordination between labour legislation, educational legislation and regional labour markets.

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[1] See " Turkey's Manpower Requirements and Education Targets 1962-1977 ", State Planning Organisation, Ankara (mimeographed).

[2] See for a brief discussion of this, Chapter I of this report.

[3] Data from Italian Ministry of Public Instruction, Rome.

An important percentage of youngsters either do not continue their studies at the end of the compulsory schooling age or leave secondary school before completing the course. The drawing up of a suitable curriculum for these young people, who used to leave as soon as they reached the end of elementary school, has now become a very strong challenge to education, particularly in the most developed Member countries. The extension of general education and, at the same time, the prolongation of compulsory schooling, implies that young people not entering upper secondary school—and of course those who drop out from lower secondary—leave school with a better level of general education than the preceding generation, but with no professional training. In its turn, the irrelevance of the general education curricula at lower secondary level acts as an incentive to leave school prematurely. School authorities may in some cases be relieved to see these reluctant pupils leave and thus help in fact to aggravate the problem.

The important social and educational efforts now being made to prevent school drop-out or leaving at an early age were inspired by research showing the striking and long-lasting consequences of a short period of education. United States experience suggests that the unemployment rate of the 18-19 school drop-out is at least twice that of the certificated high school leaver of the same age. A pupil who drops out may continue to feel the effects throughout his life: successive American studies have suggested that employment problems with subsequent income problems, and such social problems as mental illness, alcoholism, etc., many be traced to this cause. In short, a person who dropped out of school may be unemployed because he (or she) is unemployable, and in consequence becomes a chronic problem for society. Certainly the size of income and the length of schooling are closely related: for example, a study in the United Kingdom showed that, in late middle age (45-64 years), persons who left school at the age of 16-18 earned twice as much annually as those who had left when 15 or under; those with some post-secondary schooling earned 3 times as much as those who had left at the end of compulsory schooling. This illustrates the effect on earnings of the length of schooling in a society where the vast majority of the age-group leaves school above the minimum leaving age.

In most countries educational systems are under continual pressure to raise the minimum age of school leaving. The rationale behind this pressure is complex: in Yugoslavia and Sweden great stress is laid upon the fact that 14 or 15 year-olds are too young either to enter the labour market or to make what may be irreversible decisions about their career. In the United States the over-representaion of ethnic groups amongst school drop-outs and early leavers has made people frightened of the long-run consequences of an ethnically homogeneous pool of permanently unemployed people. In the United Kingdom the need, for ethnical and efficiency reasons, for more equal participation in upper secondary and higher education has caused many educationalists to advocate raising the school leaving age to sixteen. Such legislation might also narrow regional differences in educational participation. The most general argument of all is that the higher the proportion of the population with extended education, the better for the individuals concerned and for the well-being of society.

In many OECD Member countries high repeater rates in elementary and lower secondary schools place many pupils in a very difficult situation: they reach the age when compulsory schooling should have been completed but are still in the first or second year of lower secondary school or perhaps even in elementary school. Chapter I showed the extent to which this phenomenon occurs—phenomenon which implies that elementary and lower secondary education are not dealing effectively with universal participation, and consequently are not providing education wich is suitable for all chil- and consequently are not providing education which is suitable for all chil- towards leaving school at an early age, or towards dropping out will be formed, and therefore a period which contains the need of a permanent risk of unemployment for a large part of the population. A solution to the general problem of those who leave at an early age is being envisaged within the framework of the school system. It consists of setting up appropriate curricula for those leaving at an early age, reducing their numbers as far as possible and, perhaps, extending compulsory schooling. Probably the only way of ensuring them a suitable preparation is through adult or permanent education schemes. In several Member countries priority is given to such schemes in the planning of future educational policy. As yet, very little is known about the children who leave at an early age and for whom these curricula should be set up, and this represents one of the most urgent fact-finding tasks for educational research.

c) COMPULSORY AND VOLUNTARY ENROLMENTS: THEIR EFFECTS ON PARTICIPATION RATES

The raising of the compulsory school attendance age is a policy measure based on social and political reasons; it often follows on a practice of voluntary enrolment which, in turn, it re-stimulates. For example, in England and Wales, simply as a result of modifying the rules concerning the term in which a pupil may leave school, i.e. the term before or after his 15th birthday, enrolment rates were changed considerably. Between 1960 and 1965 the percentage of 15 year olds in school increased from 40 per cent to more than 60 per cent, largely because of a rule limiting the actual period during which a pupil may leave; similarly, a recent Order in Council raising the school leaving age to 16 (which was to come into force in 1970 and has now been postponed until 1972/73), follows on a tendency for a high proportion of the age-group to stay at school until that age, so that compulsion will be required for only a small minority of the population. This stimulating effect is particularly marked if the length of compulsory schooling differs by only one or two years from the length of a programme whose completion carries social or professional status. This is becoming increasingly true of England and Wales, where 18 is the customary leaving age even for prolonged academic secondary education, and where the new compulsory attendance age will be 16. The difference in the length of compulsory and academic education is being progressively narrowed. Other examples are the short, " non-academic " general secondary courses in France, Austria. Germany and the Netherlands. Pupils in these schools will usually be in the last or next-to-last grade when they reach the minimum school-leaving age; obviously they have strong motives for completing the course. Where the length of compulsory and secondary schooling is very different, massive drop-out may occur at the end of the former.

The extent to which these several factors and measures influence each other is still largely unknown. Systematic research into their interaction is a necessary pre-condition to the formulating of educational policy.

Because of voluntary enrolments beyond the statutory leaving age. compulsory schooling underestimates the magnitude of enrolments in secondary education. Countries, with a relatively low compulsory school attendance age (14 years) have been selected to illustrate this point (see Table 55). In these countries, although attendance beyond the minimum leaving age is encouraged (in Denmark municipalities are required by law to provide classes beyong the age of 14 if ten pupils want them), attendance is still voluntary. Table 55 shows how high is the percentage of the age-group attending full-time education after the minimum leaving age.

TABLE 55. PERCENTAGE AGE-GROUP IN SCHOOL (FULL-TIME ONLY) IN COUNTRIES WITH COMPULSORY ATTENDANCE UNTIL AGE 14

COUNTRY	YEAR	AGES		
		14-15	15-16	16-17
Belgium	1960/61	68.2	51.9	36.7
France	1964/65	71.9	57.8	50.0
Germany	1965/66	78.3	47.8	26.5
Netherlands	1960/61	83.0	61.3	45.6
Norway	1965/66	97.5	78.4	62.7

d) EDUCATION POLICY AND THE FORECASTING OF ENROLMENTS

Educational systems—and educational policy—respond to two sets of pressures: the trained manpower needs of the economy and the social demand of the individual and the family. In educational planning, although both pressures have to be assessed in quantitative and qualitative educational terms, they are in fact inter-related: parent-pupil aspirations are influenced by labour market factors. Countries and employers recruitment policies—and even their consumption and production plans and their production techniques—are influenced by trends in school enrolments and " output ", both quantitative and qualitative.

Although the secondary education enrolment forecasts mentioned earlier in this report are based on both types of demand, the same weight is not attached in each case. Forecasts in the first stage of the Mediterranean Regional Project were based mainly on the countries' need for trained manpower and on the corresponding output of graduates demanded of the educational system, but projections of the graduates required from upper secondary education, as carried out in several Member countries, were based mainly on social demand. Social demand was the main criterion used in planning secondary education in Belgium, France, Germany and the Scandinavian countries. In higher education, this basis was used by the Robbins Report in projecting student places in England and Wales.

The two approaches are necessarily complementary, for educational planning based exclusively, or mainly, on one or the other not only neglects the intricate nature of the country's educational objectives but is also out of touch with reality to the extent that it misinterprets the nature of the forces which shape educational systems. The elements of economic and social demand are inextricably intermingled in their internal dynamics and in the pressure they exert, from the inside, on future educational development.

Future educational needs calculated on the basis of economic demand do not necessarily correspond to those based on social demand. These differences, in particular, for secondary education, have recently entailed very difficult decisions for educational policy-makers in several OECD countries. In Austria, for example, the labour market demand for certificated upper secondary school leavers is likely to be far greater than the number available if existing trends are extrapolated. If social demand were to be stimulated in order to reduce this gap, serious educational and resource problems would arise. It is not yet clear whether the changes to secondary school structure and the later transfer facilities in the 1962 Act will make possible the absorption of a much larger social demand, or whether the additional resources needed in terms of investments, teachers, and teaching methods and aids, can be mobilized. In Sweden, the situation is reversed: there are more young people wanting to continue academic (compared with practical-vocational or general) upper secondary education than the schools can take or the economy use. The Swedish educational authorities have, in fact, announced that the economy needs a certain number of young people to enter the labour market after their compulsory schooling, and has fixed a ceiling on enrolment in upper secondary education. This ceiling was fixed by comparing educational resources with both labour market needs and pupil-parental educational aspirations. Voluntary upper secondary schooling also includes enrolments in the vocational-technical streams, and, over recent years, doubts have been expressed as to whether these will be sufficient to meet labour market requirements. In Sweden the social demand for education is out-stripping both the educational resources available and the capacity of the labour market to absorb certain types of certificated secondary school leavers, and pupils frequently select subjects or streams not always consistent with labour market requirements. The Swedish authorities have deliberately adopted a policy of stimulating enrolments in the technical and commercial streams of the *gymnasium*, but over the past few years their efforts have not proved successful: not only have enrolments in the *gymnasium* exceeded expectations, but efforts to influence the type of courses chosen have proved difficult. Therefore, what the pupils want and what the labour market demands, or educational resources provide, may not coincide.

These problems are not peculiar to the countries mentioned, but are found more generally, and will be discussed later. They indicate the possibility of conflict between social demand and the economy's needs and that, as an economy develops and the population becomes more affluent, social demand may become the main determinant of secondary school policy.

II. THE IMPLICATIONS OF EXPANSION FOR THE NATURE OF SECONDARY EDUCATION

Changes in structure and curricula are motivated by expansion in numbers and this, in turn, affects numerical growth. Qualitative change and quantitative expansion are also determined by numerous factors. The former occurs as a result of pressure of a pedagogical nature from inside the educational system and of the progress made in the disciplines taught. Technological innovations are increasingly finding their way into the schools, and indirectly cause changes in the organisation of teaching, its evaluation criteria and finally its objectives. Quantitative expansion is influenced by educational policy measures affecting the availability of new schools, abolition of fees, transport and meal facilities, labour market policy and military service regulations.

The school-level pedagogical arguments of educationnal change have received little attention from educational planners or policy-makers. Insufficiency of educational research has often meant that they have been unscientifically presented and so have had less impact than they deserved. These arguments mainly apply to secondary education, on which their impact is strongest. Intermixed with this are problems of selection. Psychological and sociological arguments have greatly influenced the timing of and criteria for selection in upper primary and lower secondary education and, to a smaller extent, the type of curriculum choice offered at this level. For some years now, arguments provided by developmental and social psychology and by educational experience and research have led to important changes in the organisation of teaching: group instead of class teaching, teaching dealing with " centres of interest " instead of rigorously separated subjects, and unified science teaching instead of individual disciplines.

Pedagogical innovation has made rapid progress at junior secondary level, particularly in those countries where these various curricula have been merged into a comprehensive-type school. The complete range of new teaching methods and aids has been widely experimented in the new schools of this type in Sweden, Norway, France, Belgium, Yugoslavia, Italy and the United Kingdom, e.g. active pupil participation, small-group teaching, co-ordination or even integration of related disciplines, greater freedom for the teacher to shape his own curriculum, less pressure from rigid state-controlled final examinations, intensive use of audio-visual aids, etc. In some countries, e.g. Sweden, this pedagogical innovation was the result of a carefully planned policy, in others it was to some extent a kind of " by-product ": the absence of clearly defined rules or methods made it possible for teachers who had been frustrated by the former system to carry out their own experiments.

This action has been encouraged by the influx of teachers from technical or vocational education and by the upgrading of primary school teachers: both groups have contributed their better pedagogical training and more practical approach to schools where knowledge, in its own right, had perhaps obtained and undesirable monopoly. This has not gone without conflict between methods and concepts, or between groups of teachers, but the final result has been most rewarding.

Other changes in curricula have been more directly influenced by the increase in numbers and by the fact that lower secondary education enrols the total age-group. Its objectives differ from those of a system which enrols only a percentage of the age group. Subjects and teaching methods for educating a small minority of the population may not be appropriate for a large minority or the majority. In the new *scuola media* in Italy the first grade no longer includes Latin (optional in the 2nd and 3rd grades); new subjects have been introduced to arouse the pupils' interests in science and its applications. In Sweden and Yugoslavia, curricula for the final stages of the comprehensive school and the primary school respectively, are very different from those of the former *realskola* and *gymnasium*. These differences vary considerably: in Sweden, for example, the senior classes of the comprehensive school have a wide series of options in contrast to the fairly set programme of the old " real " school. Because some pupils enter the labour market at the end of compulsory schooling, and others choose a career stream, practical vocational guidance is compulsory in the eighth grade. Pupils will now attend these schools who, in the past, would either have left school or be taking easier courses than those offered by the comprehensive school, so that special instruction has to be provided where required. Finally, because of the new type of education—partly the result of a new educational philosophy—the system of grading has been drastically revised. Both the frequency and type of assessment were modified. Although this Swedish example is an extreme case of a changed system, other countries have introduced similar innovations, and for the same complex set of reasons. Sometimes these changes are effected to achieve numerical expansion (e.g. new teaching methods, new subjects or combinations of subjects are introduced to encourage voluntary enrolment).

Curricula and structure changes can be justified in their own right. The unified science syllabus, introduced in several countries at lower secondary level to replace separate science disciplines, is a reply to pedagogical arguments and to the need for a better integration of science teaching and a more integrated teaching approach to a student body coming from a broader social and intellectual strata of the population. The greater importance now given to science is the most widespread consequence of the technical and cultural changes in society which have generated the need for reforms in the traditional curricula of schools. The introduction of some form of general technical education was meant to show how technological processes are a practical application of the findings of science. The greater importance of foreign languages in junior secondary and even elementary curricula is a direct consequence of growing international contacts.

At upper secondary level, technical training syllabuses have always responded directly to the technical and social changes in the surrounding society. General education maintained its twofold humanities-science syllabus for a long time, as though general culture had been defined once and for all and was unalterable. Now, however, new curricula are gradually being introduced into general secondary schools: mathematics streams have become independent of the science stream, languages and social science are recognised as special options or streams, in some countries arts curricula are no longer isolated and form part of the general secondary school curriculum, and even the technical sciences are gradually being recognised as an element of general culture. The re-organisation of the French *lycée*, of the Swedish *gymnasium* and of Yugoslavia's upper secondary schools are perhaps the clearest examples of these trends.

All these changes corroborate the theory that the move to reform secondary education is in response to quantitative expansion, to changing social and economic needs, and to pedagogical pressures from within the educational system. The quantitative expansion and the emphasis placed upon technological and scientific streams in the Mediterranean Regional Project countries are good examples of this multiplicity of pressures and motives. Similary, in the economically advanced Member countries, the need for trained manpower (manual and non-manual) lies behind many of the educational structure and curricula changes being introduced. In Sweden, for example, a rapid increase was needed in the number of commercially and technically trained people, increase which the tripartite *gymnasium* system of separate general, technical and commercial schools was not able to ensure: many local authorities could not afford three different schools, and the appeal of the general *gymnasium* was still very strong. Under the 1966 *gymnasium* reform these three types of *gymnasium* were integrated into one unified institution.[1] This system would not only be more economical and improve the status of the technical and commercial streams, but would facilitate the provision of all types of upper secondary education throughout the country. In turn, the fact that these types of education were available would encourage wider participation and larger enrolment in, for example, the technological streams.

All the arguments for educational change point in the same general direction, whether they are based on social and economic needs, popular demand for more education, or an effort to give people an education suited to their talents. In Yugoslavia, both the 1959 Act which made schooling compulsory until age 15, and the recently proposed educational reform for the 15-17 year olds, stress the need for raising the general level of education. This is considered desirable in its own right, but is also a prerequisite of the political and economic reforms involved in a series of measures that have decentralised decision-making in Yugoslavia. This decentralisation is both political and administrative, inasmuch as it increases the local authorities' control over social and political services and the workers' power to take economic decisions by giving them greater participation in the management of industrial enterprises. If the individual is to be a responsible member of a community in which considerable social and economic power is vested in the committees at local level, then he must be given a good education. Neither is it consired desirable that young people should be forced onto the labour market at the age of 14 or 15 or to make vitally important career decisions at that age.

Although, in principale, the arguments for changing educational structures largely converge, in practice the means to achieve these combined objectives may be limited. Again, to cite a Yugoslav example: the unification of academic and technological education and the extension of the latter were considered desirable on socio-political, economic and educational grounds. A place in a technological *gymnasium* costs Dinars 140,000 however, as compared with 80,000 to 90,000 in an academic *gymnasium*.

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[1] *Educational Policy and Planning: Sweden*, OECD, 1967.

and local authorities find it easier to provide the latter rather than the former. Cost differences such as these, combined with financial stringency, may severely limit the implementation of agreed policy. In fact, in Yugoslavia, technical education did expand considerably despite cost differences, but the expansion has tailed off recently and much of the earlier increase was not in the expensive form of technological education (engineering, technological, etc.) but in commercial and medical technician subjects. Certainly, the fact that both capital and recurrent costs for technical education are nearly twice as high as for general secondary education makes expansion of the former very difficult. The possible conflicting interests of the academically able and the remainder of the population, and of the social and economic objectives of education (in terms of both the numbers being educated and the types of education they are receiving) may also have restrictive influence. The gap between educational aspirations (both individual and societal) and educational resources (money, buildings and staff) however, is the most significant of these limitative factors. These points will be analysed at greater length in the final chapter of this report.

The situation is further complicated by the fact that the relative importance of these different pressures on education may vary according to the level or type of education. For example, social, economic or pedagogical influence may differ widely for elementary, lower or upper secondary education. Economic arguments concerning what is taught, and to whom, are not important in primary education where the child's interest and the need to provide a common experience of school take priority. In upper secondary (and certainly in higher) education the crystallisation of influences is quite different. Educational reform in Sweden carefully considered the relative weight to be given these various influences at each level of education. Nine years' compulsory common schooling for all is considered necessary on social, political and educational grounds, economic reasons having little place. However, upper secondary enrolment as a proportion of the age-group (two-thirds or more) and its breakdown by *gymnasium*, *fackskola* or vocational school are based on economic reasons. These refer partly to resources (i.e. financial and teaching) but mainly to labour market needs for either 16-17 year old entrants, or those with particular types of skills. This is in direct contrast to the principle of the comprehensive school in which " general manpower requirements obviously do not affect the total comprehensive school enrolment. Nor are such requirements allowed to influence the distribution of the pupils into optional subject groups ".[1]

Economic constraints (of resources and particularly in the present context of labour market requirements) affect the levels and types of education, and the national systems, in different ways. As countries become richer they may be able to postpone the time when labour market requirements influence who is being educated and in what subjects, but cannot do more than postpone it. Even in wealthy countries, in the near future, such requirements are bound to influence the upper stages (secondary and higher) of education. In Sweden they directly influence thinking on participation in upper secondary and, in the United States, in higher education. But economic constraints are postponed not only because of growing wealth:

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[1] *Educational Policy and Planning: Sweden*, OECD, 1967.

increased technological complexity and rapid economic change have led educationalists to advocate longer general education rather than specialised training as the best preparation for the labour market. This suggests that economic change causes more stress to be placed on the social and pedagogical influence on education, in order to achieve strictly economic objectives. Economic pressures are felt, therefore, as resource constraints (for example, limitations on educational budgets) influencing both the number being taught (manpower requirements) and the content of education (curricula). However, not only will these pressures differ according to the level of education, but certain types may not favour an increase in the technical-vocational side (for example the recent emphasis on prolonged general education).

Discussion concerning qualitative change has covered all aspects of secondary education: the reform of curriculum content, the balance between general and specialised education and between various branches of secondary education (sciences, technology, humanities, classics). Some countries have recently had to work out a new relationship between vocational, technological and academic education for the 15-16 year olds, and in the next decade a new formula for the relationship between the practical-vocational content of education and the general academic content at the levels just below and above compulsory-school leaving will have to be found. However, in view of the tendency to postpone selection and for voluntary enrolments to increase, this will also be true of the later stages of secondary education. Where selection is postponed until mid-adolescence, the structural relationship between lower and upper secondary education is likely to create problems of staffing, courses, etc. No educational system can pretend finally to have solved these qualitative problems. The recent past has often been a period of trial and error rather than of systematic research and experimentation. In the near future, the various solutions now being tried out must be closely examined and decisions taken concerning secondary education on more rational and scientific grounds.

The problem of selection

Selection has been the central point in secondary reform for many years. Although it concerns mainly the nature and number of educational choices at the various stages of education, other factors, such as the timing of choices, the assessment of pupils' abilities and interests, and the organisation of a system allowing pupils', parents' and teachers' choices to be expressed in terms of educational decisions are also important. In selection, the basic elements of choice differ with the pupils' ages, backgrounds and aspirations, and also with national, regional and even local needs and conditions. The choice of a system of selection is influenced by tradition and by the educational system's inherited characteristics, as well as the appreciation by policy-makers, educators and the " general public " of the implications and possibilities of the solutions offered. Although this may appear to be a truism, it is in fact one of the principal reasons why, in OECD Member countries, educational systems with very similar social and economic objectives are in fact different.

Broadly speaking, selection occurs at two stages: the beginning of secondary school, (for example, Germany, Austria, much of the United Kingdom, the Netherlands) and the beginning of upper secondary school (Norway, Sweden, Italy, France and Yugoslavia). Selection may be for different schools (for example, in the parallel system of different types of schools, for pupils from the age of 10 or 11 in Austria, Switzerland or Germany, or the *gymnasium, fackskola* and vocational schools in Sweden; or within the same school: in lower secondary education in France pupils go to the same school; they are divided into different streams, but wide transfer possibilities exist. The same is true of many areas with comprehensive schooling in the United Kingdom, and also of the latter part of the nine year compulsory schooling in Sweden. The most striking characteristic of European school structure however, is its variety.

a) FORMS AND TRENDS OF STREAMING

Four broad types of streaming can be identified; educational systems frequently combine two or more of these.

i) *The parallel system*

The clearest form of secondary selection is the vertical i.e. a parallel system with different types of secondary schools. Each school type has different groups or types of subjects, frequently up to very different levels. The so-called tripartite system in England and Wales is an example of this. The three types of schools are the secondary grammar, secondary modern and secondary technical; these all take pupils from the age of 11 but offer different levels and types of courses and have different educational objectives: the grammar school catering for the academic youngsters, the technical for the child with practical abilities, and the modern school providing basic general education for the bulk of the population. This is the pattern of secondary education that existed until recently in the majority of OECD Member countries.

ii) *The single school system*

A second type of selection is that within the same school: the pupils are divided according to subject groups, (academic, technological, vocational, etc.) or individual subjects (arts compared with sciences, one language compared with another, etc.). The American High School is an example: pupils are streamed within the school according to their tastes, talents and broad career objectives. The upper cycle of the comprehensive school in Sweden offers a further example.

iii) *The common curriculum*

In a third form of selection which has existed for some time in some elementary schools, pupils take the same subject groups at a different pace or to a different level. It is now being increasingly used in lower secondary education, and some countries (Norway and Sweden) are considering its extension to upper secondary schools. (The new Swedish *gymnasium* already uses it in some ways).

iv) *The unified syllabus*

The fourth type of system is a completely integrated syllabus for all pupils of the relevant age-group, and is in common use in the early stages of schooling in most countries. The idea of a unified syllabus is being discussed in some lower and upper secondary school systems. Some unselective comprehensive schools exist in the United Kingdom although there may be variation in subject choice. The reform being discussed in Yugoslavia for the 15-17 year old age-group limits even the subject variation and will give a unified syllabus to all pupils.

The range of possible forms of selection at lower secondary level is wider than the three types outlined above imply. For example, in the Netherlands, the " bridge year " between primary and secondary school is taught in different types of schools, but the curriculum is uniform. In France, prior to the 1963 reforms, there was selection by school type and curriculum, but efforts were made to co-ordinate the different curricula. In some countries selection takes place at the end of primary schooling, when the pupil is 10, 11 or 12 years of age (e.g. parts of the United Kingdom, Germany and the Netherlands); in others, it takes place during lower secondary education (in the new Swedish comprehensive school it is a gradual process for pupils aged 13, 14 and 15, and in Norway in the 8th grade at age 14). European educationalists have recently become more conscious of selection problems and of the need for postponement until secondary education.

Selection, and its rigidity in upper secondary education is now being increasingly reconsidered. The 1966 educational reform in Sweden combined the three types of *gymnasia*—general, technological and commercial—under a common structure. By increasing the number of subjects common to the three curricula selection was postponed to a later stage; transfer from one stream to another was made easier, thus ensuring a better distribution of talent. A committee is now examining the next step, namely, combining the three types of upper secondary school—*gymnasium, fackskola* and vocational—on the same school site. Theoretical and practical work will be kept separate, but all students will do both. The school is to be divided into social-humanities, technical-sciences, and economics streams, but pupils would have a variety of courses from which to choose. In Norway, too, the authorities are considering streaming pupils in upper secondary schools according to their ability rather than according to the subjects taken.

Streaming according to ability, and hence to speed of learning, is in line with modern theories of curriculum improvement. The educational structure must be very flexible, and teaching cannot be on the basis of established curricula laying down a standard load of learning with centrally prescribed textbooks. Only a flexible curriculum will allow the type and level of education to be adapted to the individual pupil's progress, aptitudes and interests, or, in other words, the " democratisation of education " to be given shape in the classroom.

These ideas, exposed in former OECD publications[1], are slowly becoming part of the educational philosophies and policies of Member countries. Even in new, lower secondary schools, however, where the need for this type of streaming is greatest and the chances for its realisation best, the obstacles to quick progress in this field are almost insurmountable due to the absence of clear objectives, of the necessary new teaching material, of appropriate teacher retraining schemes, of classrooms which can be adapted to the individual approach, and of any attempt to adapt evaluation criteria to the variety of pupils' performances logically resulting from this approach.

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[1] See in particular *Curriculum Improvement and Educational Development*, OECD 1966, pp. 56-58.

The Swedish reforms are to introduce a common first year *gymnasium* curriculum (except for technological students), specialisation decisions being left until the end of the year. The reform now being discussed would extend this to vocational and other types of secondary education. There is a practical problem of working out syllabuses. In Sweden it has been suggested that all subjects be offered in both theoretical and practical form and that pupils select various combinations of subjects and forms according to their job aspirations and abilities. In the Yugoslav proposal, after the 8-year compulsory schooling, a standard 2-year syllabus for everyone will be offered. Most school systems lie between these two extremes of " individualized " and " standardized " curricula. Some countries have increased the number of lessons which are common to all in upper secondary education, and this frequently means that pupils take a variety of subjects (i.e. those reading humanities take courses in general science and vice versa). An explicit position in this respect has been taken in a recently published report by the Schools Council for England and Wales on Sixth Form curricula (i.e. for 16-18 year olds). The report recommends that programmes be varied by the introduction of major, minor and general subjects; the pupil will thus acquire a general education with specialist training in particular subjects, so that he can either enter higher education or the labour market. All systems have similar problems and must decide how far the competing claims for " general " education and " specialist " training can be met, the extent to which the enlarged common component in secondary education is to be used to ensure greater flexibility and, whether general education and specialist training are incompatible within the framework of educational objectives. In Italy, the curricula for the first two years of the two main types of upper secondary schools, of *lycées* (including teacher traning) and technical institutes, have become increasingly similar over the past few years and a common two-year course (the *biennio*) for all who plan to enter upper secondary education, is being considered.

Similar questions also arise outside Western Europe. In 1963, the Japanese authorities began a re-examination of the upper secondary education system created in the late 1940's, to see " how to improve and expand upper secondary education ". Although the problem was much the same, it took a slightly different form. The authorities' main concern was to make the upper secondary school curricula more varied; they also wanted to do something about the large proportion (30 per cent) of the age-group which does not attend school in late adolescence and about the relationship between vocational and general secondary education. At present 60 per cent of the pupils in upper secondary school take the " general course " which is a standard one for everybody. No variation, concentration or acceleration is possible. The Japanese authorities feel this is at variance with the differing capacities and interests of pupils, and with the needs of the economy and society for persons with different types of training and education (arts, sciences, etc.). In Japan, therefore, the movement is not towards a " common curriculum ", but away from it, the problem being to introduce streams into the existing general upper secondary school course. In short, both Japanese and Western European systems must try to offer sufficient variety to cater for their pupils' ability and interests, and for society's needs. At the same time the common curricula must be sufficient for pupils to be able to transfer, or to provide them with a good basic education.

New streams have been introduced into upper secondary education in Europe to provide wider variety in training, e.g. an economics-social stream in the French *lycée*, new general streams in the Swedish *gymnasium*, technical courses for the training of tourism specialists in Italy, new science streams in Belgium, and a special course for the musically gifted in parts of Germany, as well as additional mathematics and social science courses in many countries.

The basic aims of the reforms in all these countries are the same: to introduce into specialised upper secondary education a variety of courses, flexibility of transfer and more common curricula. In some cases this implies courses in the humanities for scientists and technologists, in others, courses in basic science for specialised language or humanities streams, the common objective being to offer upper secondary pupils a diversified education with some specialised elements. The new streams in science, technology and social studies attempt both to diversify upper secondary education and to meet the changing demands of the pupils and the needs of society. These reforms are a response to pressure from complex industrial societies which are becoming increasingly conscious of the importance of education in economic and social development. Some of pressure seeks to get a wider distribution of able young people through all types of secondary schools, and this implies increasing the attraction of the sciences and technologies at the expense of that of the classics. The groups of subjects taught in upper secondary education, must be re-thought in terms of the educational content and teaching methods used. In many OECD countries the arguments which led to this type of reform in lower secondary schooling are now valid also for upper secondary education. This level used to be reserved for the small percentage of the age-group who were best socially placed but shortly the majority of those up to 16 —and often beyond—will be in full-time education in many countries. The extent to which curricula and methods applicable to a small minority are suitable for mass education, however, and to which they meet contemporary economic, social and political needs must be carefully examined. A number of problems therefore face contemporary educationalists: all concern what is being taught and how, but their origins differ. Some arise because the changing educational needs of an industrial society create friction for the traditional content of secondary schooling. Others because more pupils may mean changes (in tastes, abilities and backgrounds), and these may also generate tension within the traditional system of secondary education.

Of these problems the easiest to document are the quantitative aspects of change. All educational systems are experiencing pupil pressure on places, partly for demographic reasons, and partly because of changing pupil-parent educational aspirations and changes in labour market demands. These are the fissionable elements in the educational explosion. But their impact on the qualitative aspects of education (what is being taught and how) is equally important. Events at one stage of education influence earlier and later stages. Again the numerical aspect is easiest to document, (increased pressures on higher education from the swollen ranks of secondary school graduates will be discussed later). A change in teaching content or methods at one level will mean a change in methods at later levels. Quantitative and qualitative changes have also been experienced simultaneously. For example, in a very short space of time Yugoslavia reformed her primary and lower secondary structures, and increased enrolment up to terminal age (15). The effect on upper secondary schooling was to expand admission considerably (with a possible fall in standard) and reduce the length of the course.

All the pressures in Western European education are not towards innovation however, and innovation is not always readily accepted. This may be due to the conservatism of pupils and parents in opting for traditional subjects. In Sweden the status of the general *gymnasium* is still very high in spite of efforts to make technological and commercial subjects more popular. In other countries, classical or humanistic subjects still far outweigh science of modern subjects, due as much to reluctance to change on the part of the school system as to pupild and parental conservatism. In Italy for example, where the classical stream is pre-eminent in the *lycée*, nearly half of the certificated leavers from this stream entering university transfer to science or technological faculties. Presumably these pupils would have preferred science streams in the *lycée* had facilities been available. Long-term parent and pupil choices are changing however. The previous chapter showed that, particularly in Italy, the proportion of students in the science *lycée* has increased considerably. The type and level of the demands made by universities may also exert considerable pressure on secondary school education. For example, in the United Kingdom, the specialised entrance requirements frequently made by universities are considered by many to be the crucial factor preserving both undue specialisation and examination consciousness in the sixth form. The same argument is advanced by primary and lower secondary teachers concerning the demands made by upper secondary education and how these demands both disturb educational experience and inhibit innovation.

The chain effect of increased lower secondary enrolment is felt successively on upper secondary and higher education. Qualitative changes in curricula and teaching methods also affect succeeding levels. For example, an extended common curriculum in lower secondary schools may prevent pupils from choosing their specialisation in upper secondary schools, or from attaining the high standards expected of them in this subject. Changes in curriculum and in teaching methods may also affect the customary methods of examining and assessing pupils. Certain methods for terminal examinations (e.g. nationally set and marked written papers) may be possible only if a small proportion of the age-group is concerned. New types of courses, new subject combinations and new teaching methods, many require entirely different methods of examination. The effectiveness of language laboratories for teaching foreign languages cannot be assessed by traditional written examinations. New types of science courses may require entirely different sorts of examinations. Finally, the philosophy and objectives of many of the changes introduced into secondary schools may be incompatible with traditional methods of pupil assessment. Therefore, for practical and theoretical reasons, an expansion in the number of pupils or a change in the content of education implies that evaluation methods may have to be revised.

To resume: education is a continuous process, each stage influences what is being done in previous and subsequent stages. Changes in one stage therefore affect both quantitatively and qualitatively other parts of the system. Educational reformers and planners must always bear this in mind.

b) THE EMERGENCE OF NEW SECONDARY SCHOOL STRUCTURES

i) *Comprehensive systems*

Change and innovation are salient characteristics of current education. Perhaps one of the most striking of the structural changes is the development of the " comprehensive " system in secondary education:

In Sweden and Norway, the nine-year comprehensive school started on an experimental basis during the early 1950's. By the beginning of the 1970's all the children in these countries will attend a common school for nine years until the age of 16. There will be some local variation in the time a child spends at any particular school. Some streaming by subject takes place in the 7th and 8th grades, and is more pronounced in the 9th grade (see below). But basically, in both countries, a common system covering structure and curricula will extend well into what in most countries is considered to be secondary education.

In France, although streaming by subject starts after the child leaves primary school at age 11, the four-year, first stage of secondary education is to be in a common school except in urban areas where it remains attached to the various upper secondary schools. In all other parts of France, separate and distinctive *Collèges d'enseignement secondaire* have been, or will be, established. Although more streaming is done than in Norway or Sweden, the structure of the " CES " must be considered as comprehensive.

In Italy, the development of the " middle " school for the 11-14 year olds means that the first stage of secondary schooling takes place in a fully comprehensive system. As from the second year pupils select options for a few hours of the weekly timetable, but roughly 90 per cent of the teaching is common, and candidates from either stream qualify for the *lycée*.

In Yugoslavia, the new system has an eight-year common schooling. A further two-year " united school ", comprehensive in structure and without any streaming in the first year, is now being experimented to prepare 16 to 17 year olds for all types of short, upper secondary education.

In other countries the situation is less clear, or the implementation of plans is less advanced:

In Greece, an Act has been passed which, when implemented, will increase compulsory schooling to nine years. The first six years are now spent in a common school; there may be some streaming in the 7th-9th years, with many common subjects.

In England and Wales the Ministry has asked local educational authorities to submit plans for a reform of secondary education on a comprehensive basis, but no definite pattern has yet emerged. During the 1950's several local authorities (e.g. the old London County Council, Coventry, Leicestershire and many rural authorities) had already introduced comprensive schooling, in some cases, for the whole period of schooling—so that changes in the sixties are likely to be an extension of existing practices.

In Germany, the Länder of Baden-Wurtemberg, Berlin, Bremen, Hamburg, Hessen and Nordrhein-Westfalen are developing, on an experimental basis, comprehensive schooling which is competing with the parallel system.

In Denmark, there is common schooling up to the age of 14, and then a voluntary parallel system. The entrance examination for upper secondary school may be taken in the junior section of the *gymnasium* or, as is far more usual—80 to 90 per cent— in the continuation classes of the common school. The junior teachers' association as recommended the common system until admission to upper secondary school.

This common system is already applied in Japan, the United States and parts of Canada, in both lower and upper secondary schools. Europe in thus adopting a system which already exists but to which her different cultural and political traditions will certainly give national variety, in spite of the influence of such common factors as the widening of educational opportunities, economic-technological needs, and the general principles of the democratisation of education.

Europe's action may also be influenced by the fact that the countries originating the comprehensive system are now making some changes. Japan is introducing different streams into general upper secondary schools. In the late 1950's, the intellectual standard of those leaving United States' high schools was severely criticized. The " pursuit of excellence " advocates were divided: some wanted to reintroduce selection and streaming, while others preferred improvements within the existing comprehensive structure. The wide regional or local variations in the quality of education called for action to bring the worst up to the best, not necessarily incompatible with structural reform. The New York Boards' " Policy on Excellence " in 1965 sought to bring together the academic and multitrade vocational high schools into a four-year comprehensive high school. Other large urban educational authorities emulated the New York systems of specialised academic high schools (Bronx High School of Science, Brooklyn Technical High School) to meet the needs of students with special abilities.

The United States example also illustrates that, if regional, ethnic or class differences in educational participation exist in a comprehensive-type system, structural change alone will not eliminate educational inequalities. Others ways to reduce these inequalities include " compensatory education " and innovations in curriculum, teaching methods, and in the approach used towards the types of pupil concerned. Measures can be taken at primary or secondary level to compensate individuals for disadvantages in home and cultural backgrounds: extra traditional resources (better pupil-teacher ratios, more highly trained teachers); modifications in curriculum and in teaching methods (adapting the curriculum to the youngsters' experience); extra-curriculum activities (e.g. the " wider horizon " schemes); home visits and improvement in home-school relationships; use of trained social workers, special remedial agencies and week-end summer camps, etc. Some schemes use various social-educational devices to try to compensate children's poor socio-cultural experience before they start full-time education (for example nursery schools). This list of other-than-structural changes brings out the need to assess the efficiency of these different programmes for achieving specific educational objectives. Cost-benefit studies on the effectiveness of different types (structural, curriculum, teaching method), levels (pre-school, primary, secondary) and ranges (educational, welfare, remedial) of programmes for widening participation in education are urgently needed.

The trend towards a comprehensive structure exists but is by no means universal. Austria, the Netherlands, much of Germany, Spain, Portugal, Turkey, Switzerland, Ireland, Iceland, and Luxembourg each have a parallel system of secondary education. The complicated situation in the United Kingdom has already been mentioned. Except for those areas in England and Wales where an eight- or nine-year comprehensive school, starting at the age of 11, has been introduced, and the plans for integrating the *gymnasium*, the *fackskola* and the vocational schools in Norway and Sweden, parallel schooling is found throughout Europe in upper secondary education.

The trend towards comprehensive secondary schooling is the most salient change that has taken place in European education in the past twenty years. If OECD Member countries are ranked by their degree of " comprehensiveness " in secondary education, we have: the United States, Japan, parts of Canada and parts of the United Kingdom with common school structures until the end of secondary schooling. Sweden, Norway and Yugoslavia have common lower secondary education and are considering the extension to upper secondary. Some countries have introduced, or are introducing, various types of comprehensive schooling in lower secondary education (France, Italy and Greece) and are preserving a parallel system in upper secondary schooling, while others, although preserving parallel lower secondary education, try to make it more flexible by a variety of innovations (Austria and Germany). A distinction must be drawn, however, between parallel school structures and common school syllabuses. Selection may be among different schools (i.e. parallel system) or within each (by ability or course, etc.). There is also a trend in some countries to postpone or eliminate in-school treaming, to introduce common curricula and common school structures into secondary education.

ii) *The widening of opportunities inside a parallel system*

The same pressures which led to " comprehensive " structures in secondary education in many countries, led to different results in others: selection by type of school is preserved, but the system is adapted to meet the needs of increased participation by a programme of pupil assessment and guidance before, or at the beginning of streaming and by facilities for pupil transfer throughout lower secondary education.

In Austria the 1962 Act placed great emphasis on facilitating transfer from upper primary schools (non-selective, *Hauptschulen*) to grammar schools (selective and giving access to higher education, *Mittelschulen*). Transfer between parallel schools after the normal selection age is an alternative to the comprehensive structure. In theory, transfer from upper primary school to the grammar school has been possible for over 40 years, but " ...the efficiency of these bridges and cross-links has been very small indeed ".[1] From 1956/57 to 1962/63 there was never more than one per cent of the pupils in grades 2-5 who came from upper primary schools (1.64 per cent in 1964/65). The 1962 Act sought to encourage transfer by:

- removing transfer barriers due to differences in curricula. The Act states " ...differences between curricula must not be such as to impede the transfer of pupils ". Such statements are declarations of intent; it is still too early to say whether less different curricula have increased pupil transfers. The parallel system may perhaps be kept, along with a comprehensive sub-structure which might solve any individual problems, while the parallel system would provide some control of standards and competition and be more adaptable to special educational problems, especially if it manages to overcome the strong pattern of age classes;

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[1] *Educational Policy and Planning: Austria*, OECD, 1968.

- creating the " second path " through other than traditional grammar school to higher education. Many types of schools have a wider access to higher education as one of their objectives, e.g. teacher training colleges which recruit from both grammar schools (at the end of the 4th year) and upper primary schools. Graduates from these colleges are admitted to certain institutions of higher education (by obtaining the *Allgemeine Hochschulreife*). The 1962 Act created new types of grammar schools (*Musisch-pädagogisches Realgymnasium*) taking pupils aged 14 to 15; in 1963/64 and in 1964/65, over 80 per cent of admissions came from upper primary schools.[1] The business academies, the secondary technical and trade schools and the rural grammar schools also recruit from upper primary and give access to certain types or faculties of higher education.

Since the Act was passed only in 1962, it is too soon to estimate how many have been admitted to higher education through these various channels. The past is not a very adequate index of the future,[2] for, the whole social, political and educational climate has changed, and greater use will probably be made of these facilities. Should the wider admissions rules not have positive results, this will not be due to a shortage of potential candidates: in the later 1960's, nearly 40 per cent of leaving-certificate holders from upper secondary education (grammar schools, teacher training, secondary technical, etc.) will be from the second path institutions described above.

Germany also has its system of *Zweiter Bildungsweg* (" second path ") institutions:[3] this system developed following the growing awareness that general education should not be restricted to the humanities but include polytechnical and vocational subjects. This allows those who come from upper primary schools, or who did not complete general secondary, to improve their qualifications in vocational schools. The aim is not access to higher education, but a higher vocational level. There are three main types of " second path " institutions:

Vocational, for those who, after completing upper primary school (*Hauptschule*) or the first stage of *gymasium*, have had at least one year's vocational education (usually in a *Berufsschule*). Pupils may enter a vocational promotion school (*Berufsaufbauschule*) for a 1½-year full-time or 3-year evening course for admission to the *Fachschulreifepruefung*; this is a form of secondary leaving certificate granting admission to post-secondary (but non-university) colleges of engineering (*Ingenieurschulen*), colleges of economics, and colleges of social work. Leaving-certificate holders from the middle schools (*Realschulen*) and drop-outs from the 10th-13th grades of the *gymnasium*, are also eligible for admission if they have completed two years of supervised practical work. Post-secondary college graduates may then go on to university-level education.

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[1] In 1966/67 these new *gymnasia* enrolled 8,881 pupils as compared with 93,900 in other general grammar schools (*Allgemeinbildende Höhere Schulen*). *Source : Oesterreichische Schulstatistik*, 1966/1967, Wien.

[2] A study of the 1956/1957 admissions showed that 11 per cent of first year students in higher educational institutions came from secondary vocational and trade schools.

[3] Information and data from the Secretariat of the Standing Conference of Ministers of Education, Bonn.

" Vocational promotion school " are usually attached to part-time vocational schools. The curriculum is vocationally oriented; the aim of the course is to provide promotion possibilities in the technical-vocational field. In 1963 they were attended by about 56,000 pupils.

Kolleg and Abendgymnasium: the former consists of a two-year full-time course, the latter of a four-year evening course; both provide general education leading to the *Abitur* and accept only pupils who have completed upper primary or middle school and have finished vocational training. Candidates must pass an entrance examination. The *Kolleg*, in particular, sets high admission standards, and the majority of the students obtain the final certificate (e.g. in one *Kolleg* in Hesse, in recent years only 1 out of 3 candidates was accepted, but 19 out of 20 passed the *Abitur*). Most of those who complete these courses go on to the university. In contrast to the vocational " second path " pupils, their subsequent educational career usually bears no relation to their former vocational training. The number of certificated leavers from these schools increased from 916 in 1960 to 1,836 in 1965, as compared with 55,721 and 48,528 respectively, from the general *gymnasium*.

Promotional schools: special types of *realschule* and *gymnasium*, or special branches and classes, have been developed at general secondary

TABLE 56. GERMANY: CERTIFICATED LEAVERS FROM UPPER SECONDARY EDUCATION[1], ABSOLUTE AND RELATIVE NUMBERS

	1950	1955	1960	1965	1970	1975
1. Certificated leavers:						
Total	33,385	32,846	71,190	69,434	85,900	111,500
Of which:						
Gymnasium[2]	32,785	32,146	55,721	48,528	58,800	77,000
Abendgymnasium[2]	600	700	807	1,087	1,200	1,500
Kolleg[2]	..	..	109	749	1,100	2,000
				3,282	6,300	10,000
Hohere[3,4] Fachschule	..	..	3,114 (1961)			
Ingenieurschule[3]	..	..	11,439 (1961)	15,788	18,500	21,000
2. Age-Group (19-23 years): Average	747,345	805,760	990,000	746,013	765,200	777,000
3. Percentage: (1:2)	4.5	4.1	7.2	9.3	11.2	14.4

[1] Data provided by Sekretariat der Ständigen Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland.

[2] Carrying admission to higher education, all subjects and institutions.

[3] Those students who pass with honours may take corresponding subjects in institutions of higher education or, with an additional examination, any subjects.

[4] Only those from 3-year courses.

level also to enable young people to go on to higher education. These schools are particularly intended for those who want to transfer later than the normal selection age (10 or 11) to another parallel branch of secondary education. The curriculum of these schools allows pupils entering at a later stage to obtain their certificates in the same number of years of primary plus secondary schooling as students in the *gymnasia* (longer course). Promotional schools thus allow a child who is late in developing, or is culturally or socially handicapped, to start the pre-university course at an age when it is easier to judge his mental ability, or to overcome the handicap of his environment; they make it possible for decisions concerning his school career to be revised up to the age of 15 or 16, or up to the 9th or 10th school year.

As these innovations are recent, and do not necessarily exist throughout Germany, it is difficult to estimate their importance exactly.

Recent figures *Abitur* passes show:

FROM	1959	1965
Gymnasium	51,453	48,528
Kolleg + Abendgymnasium	743 (1.4 %)	1,836 (3.8 %)
Plus engineering colleges and vocational schools		3,248 (6.7 %)

These figures show the growing importance of the *Kolleg* and *Abendgymnasium* and that nearly 7 out of 100 admitted to higher education do so through this " second path ".

Table 56 gives more detailed information covering a longer period, and includes those obtaining special admission to the university through technical and vocational courses. It is estimated that 3,500 students will take the *Abitur* by the second path method (*Kolleg* plus *Abendgymnasium*) by the middle of 1970 and that 31,000 will obtain a similar qualification through technical courses, i.e. almost as many as obtained leaving certificate from the traditional *gymnasium* in the middle 1950's.[1]

iii) *Guidance and Assessment Programmes*

These facilities allow late developers, and those who decide to study after the normal age for so deciding, to continue their education; they eliminate blind alleys and provide a second chance. In Germany different types of innovations have been introduced in certain areas, e.g. the postponing of the age of transfer from the common (elementary-primary) school to a selective parallel system of secondary education (*gymnasium, realschule, hauptschule*). In eight *Länder*, the decision concerning secondary schooling is taken after the fourth year of elementary school when the child is ten years old. This is considered by some to be too young, and the City-States of Berlin, Hamburg and Bremen continue their primary education until the 6th year of school, parents being allowed to request streaming after the 4th year. Three *Länder* have experimented with a streaming period (*Förderstufe*) during the 5th and 6th year by leaving the children together for most of the lessons, but streaming by ability into groups for some subjects, which are taught by teachers from all types of secondary and upper primary education. Seven *Länder* regard the first two years in secondary school (5th and 6th years) as an " entrance period " in which promotion is not according to merit, to allow all children to adapt themselves to the more academic style of secondary education. Auxiliary courses are held for children who need them.

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[1] Very few of these technical certificate holders have access to higher education, however.

To improve streaming in secondary education, assessment and guidance are given in the final year of common elementary school and also in secondary education where pupils switch from one stream to another.

By postponing selection, improving the pupil's choice by suitable guidance and making the curriculum more uniform to facilitate transfer, it is hoped to preserve the parallel structure while ensuring more widespread participation and the type of education best suited to the child's abilities: i.e., to give young people " comprehensive " education without a comprehensive structure. In some parts of Germany, a comprehensive system is being attempted by use of the " school base " idea, i.e., various types of secondary school are situated in the same area and share some common facilities. In others (especially rural and new housing areas) all types of secondary education are being taught inside the same buildings (*Gesamtschulen*) so that transfer possibilities are thus increased.

Germany represents a microcosm of the changes taking place throughout Western Europe. All the systems are concerned with pupil guidance and assessment: the age at which this should take place, the criteria, tests, etc., to be used. These questions are most pressing in systems where selection is at an early age, and is between schools (i.e. parallel structures), and consequently there is a tendency to formalize this process into a guidance-assessment year. In addition to Germany, this has already been done in parts of Belgium, the Netherlands, Switzerland, and, between 1959 and 1964, in France. Although the guiding and assessing of pupils are in theory common to all school systems, in those preserving a parallel structure they are a vital necessity at the level immediately below the parallel stage, hence the creation of special classes or types of school to ensure effective and just pupil assessment. The difficulties here are well illustrated by French experience when administering the *cycle d'observation* between 1959-1964 and the *Collège d'enseignement secondaire* at present. The *cycle d'observation* attempted to apply the syllabus inside the old parallel system, and immediately ran up against problems of the differential status of existing school types, the difficulty of ensuring common standards, the problems of providing all courses, in small schools, etc. The *Collèges d'enseignement secondaire* (CES) will eventually eliminate some of these problems by providing parallel courses inside a common school structure. The differences between the various curricula will be drastically reduced in order to operate effectively the assessment and transfer of pupils.

Three broad types of guidance-assessment strategies have been developed:

i) A systematic appraisal, screening and testing of young people in the final year of primary school, as is now carried out, for example, in the Netherlands and Belgium. In England and Wales this culminates in the 11 + examination. Later re-assessment and transfer during secondary education.

ii) Assessment during the early years of secondary school, with testing and guidance taking place inside the existing parallel school structure. Theoretically transfer to any of the schools is possible e.g. first cycle (4-years) of secondary education in France and the assessment year in parts of Switzerland.

iii) Separate and distinctive class(es) and buildings where assessment and guidance take place, followed by transfer to a secondary school. This is usually found (in Belgium and the Netherlands) where special facilities have been established on an experimental basis or where new school systems are being built (new housing areas, etc.).

The role of guidance-assessment is not the same in parallel and comprehensive schools systems. For the former it is an essential pre-condition to the division of the pupils into parallel schools. In the comprenhensive school structure the period of guidance and assessment during which information can be collected about pupils—and decisions made concerning educational potentialities—is prolonged. By postponing irreversible educational decisions, flexibility is introduced into the system. If comprehensive systems are to be effective they must be guidance-assessment institutions.

iv) *The Emergence of Common Curricula*

The term " comprehensive education " has two meanings. It refers either to a single structure covering the entire age-group, or to the subjects being taught. In the first sense it refers to an educational system offering every type and variety of course, and implies that these are contained within the same school structure, selection being within a school rather than between schools offering different and varied types of courses.

This is the definition suggested by Conant when, in describing the American system, he says: " It is called comprehensive because it offers, under one administration and under one roof (or series of roofs), secondary education for almost all high school age children of one town or neighbourhood. It is responsible for educating the boy who will be an atomic scientist and the girl who will marry at eighteen; the prospective captain of a ship and the future captain of industry. It is responsible for educating the bright and the not-so-bright children with different vocational and professional ambitions and with various motivations. It is responsible, in sum, for providing good and appropriate education, both academic and vocational, for all young people within a democratic environment which the American people believe serves the principles they cherish ".

Some school systems have gone a stage further with the common school structure by continuing unstreamed classes into secondary education. Some countries have a common curriculum for all pupils in the lower secondary school, e.g. the middle school in Italy (and the proposed two-year common school after the *scuola media*), and the nine-year comprehensive schools in Sweden and Norway. In Sweden, these schools have a common curriculum for six years, with some streaming (number of languages) in the seventh and eighth years; in the ninth year there are nine subject combinations. Most pupils are now choosing the streams giving admission to the *gymnasium:* in 1960 there were 54 per cent and in 1965, 78 per cent. Of these most chose the general *gymnasium* preparation. This implies that in spite of streaming possibilities the majority of the 15 to 16 age-group receive a common education.

Similar efforts towards a common curriculum and school structure are found in Norway and Yugoslavia. The possibility of a two-year school following the eight-year compulsory school in Yugoslavia is an interesting example of the trend towards prolonged common schooling. Education authorities adopting this system will offer a common syllabus to all pupils aged 15 and 16 who stay on at school. It will cover three broad areas: humanistic subjects, scientific-technological subjects, and practical-vocational experience. Roughly the same proportion of the pupils' time will be spent on each of the first two subject-groups, which will not be streamed. The practical-vocational side will probably be streamed on the basis of the pupils' interest, and facilities available. Although for the moment, only a few parts of Yugoslavia are likely to introduce this system on an experimental basis, its adaptation would mean that young people receive a common education until they are 17 years old. In Sweden, in the higher classes of comprehensive school, streaming into several lines is possible, whereas in the corresponding classes in Norway there will be the same curriculum for all pupils, the main difference being the speed at which pupils advance.

Various reasons have been given for lengthening common schooling: in Italy, Norway, Sweden and Yugoslavia emphasis has been on the socio-political objectives of the educational system, and the move towards a common school structure and curriculum have gone together. Some countries have stressed assessment and the need to widen educational opportunity; they recognize the need for common curricula but not necessarily for a common school structure. In Austria, wider educational participation is sought through greater uniformity in the curricula of parallel lower secondary schools (the same is true of many parts of Germany, the Netherlands and England and Wales).

c) GENERAL PROBLEMS ARISING DUE TO THE RECENT CHANGES IN SECONDARY EDUCATION

Although the possibility of transfer between schools and streams exists in a parallel system, some countries consider it is too limited. The percentage of late transfers to general secondary schools in Autsria is very low, and in England and Wales instead of roughly a quarter of all secondary grammar pupils being transferred between the ages of 11 and 15 in the tripartite system, there is only one or two per cent, hence one of the arguments for reform is the impossibility of selection at age 11 and the difficulty of guaranteeing later transfer. How far the situation is due to ineffective transfer facilities and how far to the intrinsic limitations of the idea of transfer is not known. The many reasons for this difficulty of late transfers include: different school curricula, different quality of teaching, the physical separation of school buildings, pupil inertia and parental indifference, and the fear of stigmatizing a pupil where prestige varies according to type of school. These apparently marginal reasons often mean that transfer facilities are not used.

Comprehensive secondary structures have often been introduced largely as a result of these " marginal " factors, which may weaken the most perfect of transfer arrangements. Other reasons have also favoured the trend towards comprehensive schooling: in Yugoslavia, at the proposed school reform, the age of 14 is considered too young for education or career decisions, or for judging the sort of terminal education most appropriate. Similar arguments were used in Sweden to extend compulsory schooling to 16, and to introduce the common school. Because the task is difficult and the consequences of wrong assessments serious, selection has been postponed and more attention is being paid to assessing and counselling individual pupils.

A comprehensive structure does not guarantee flexibility however, since streaming according to aptitude (e.g. academic, technical-vocational) or to pupils' subject interest (science, social studies and humanities in selective upper secondary education), with a small amount of common subject matter makes subsequent transfer difficult. No data are available but, in spite of the lip service paid to easy transfer, the general impression is that transfers seldom take place. In England and Wales for example, steaming, which varies in amount from area to area has become very watertight in primary schools. The proportion of pupils who change streams is very small, and certainly far less than psychometric information implies is necessary; streaming apparently becomes self-fulfilling.

In France, in 1962, the *Section de psycho-sociologie* of the *Institut national d'études démographiques* started a follow-up study of the pupils entering the first grade of the then *cycle d'orientation* (*classe de* 6^e). A sample of 17,500 pupils was observed during the two years following their admission.[1] The " orientation " originally chosen was shown to influence strongly subsequent orientation (i.e. at the end of the 2-year cycle when pupils started in one of the different types of secondary school). Nine out of ten pupils stayed in the same type and so did not profit from re-orientation possibilities. Regional, and particularly social origin determined this initial choice, but also a closer study of the group which went through a re-orientation, provided surprising results. Although it allowed a few gross initial mistakes to be corrected, in general it was, school results being equal, the pupils' social background which was the deciding factor: children from the richer social classes mainly succeeded in being re-oriented " upward " in the *lycée* stream while those from the poorer classes were more often reoriented " downward ", to the *Collège d'enseignement général* or from this to the *classes terminales* (terminal primary). The tendency for the type of secondary school a child attends to be influenced by his social class was thus, much against the intention of the educational authorities, strengthened by re-orientation.

Transfer between arts and science sides is also very infrequent. In England and Wales, theoretically, the subjects taken at advanced level do not limit the choice of specialisation in higher education, although some universities do require certain subjects to have been taken at advanced level. Therefore, although choice at university is not completely free, there should be a fair degree of flexibility, especially since all types of subjects may be combined, e.g. arts and sciences, at Advanced level. In fact, a change of subject specialisation between sixth form and university is relatively rare. The Robbins Report shows that 90 per cent of the undergraduates in the humanities had taken " A " levels in arts subjects only, and a similar percentage of science undergraduates had taken science " A " levels; only 4 per cent of the humanities undergraduates had " A " levels in some other subject group. In 1960/61, nearly 50,000 people took Advanced levels, but only 2,180 (little more than 4 per cent) of these had combined arts and science subjects. Therefore, an examination system that should make for greater flexibility has not had that effect.

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[1] See Alain Girard : « Les facteurs psychologiques et sociaux de l'orientation et de la sélection scolaires. Le cheminement d'une promotion d'élèves pendant les deux années suivant la sortie du cycle élémentaire », *Population*, Vol. 21, July-August, 1966.

This does not mean that flexibility, whether between course types or school types, is impossible, or that the " second path " facilities in Austria and Germany are likely to be inadequate. Their effectiveness may depend on the attitude of the educational authorities concerned. Conscious efforts must be made to ensure that use is made of the facilities offered. The present situation may be due to failure to use them rather than to their shortcomings. The past experience of England and Wales and France need not necessarily be a precedent for those countries which adopt similar policies today.

The difficulty of introducing flexibility into a parallel system should not be under-estimated; it is complicated by the rapid changes in pupil distribution by subject specialisation, and by the lack of speed with which new types of courses are accepted. Over the past ten years, considerable publicity has been given to the development of science and technology in most Member countries, but the impact this has had on the subjects chosen in upper secondary education should not be exaggerated. In Sweden, for example, in spite of efforts to expand science and technology, between 1955 and 1962 the percentage of *gymnasium* leaving-certificate holders in technology increased only from 9.5 to 10.7 per cent for the general *gymnasium*, and for those specialising in science from 38 to 44 per cent. The increase was much smaller than policy-makers hoped, or the economy required; and the integrating of the three types of *gymnasia* was advanced as a means of encouraging students to take technological subjects. To ensure that new subjects could be taken throughout the country, both the structure and curricula of the three *gymnasia* streams were integrated. The same conservative story is true of other countries: in both France and Switzerland the percentage breakdown of upper secondary school certificate holders remained unchanged between 1957 and 1964.

Some countries are now trying to introduce a core syllabus into secondary schools to prepare pupils for any type of upper secondary education,[1] or faculty of higher education. The proposed united school in Yugoslavia and upper secondary reforms in Sweden are examples of this trend. Common secondary education is prolonged as much as possible, partly to encourage pupils to select science or technological rather than classical or modern subjects. The whole question of selection arises here, whether vertical (between schools) or within the school (comprehensive). The prolonging of common schooling (affecting structure and subjects taught) means that streaming by ability is being extended to upper secondary education in many countries. Sweden is the best example, but other countries will be affected as the logic of upper secondary reforms is felt.

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[1] In some countries, e.g. France and Italy, holders of secondary school leaving certificates have access to all faculties, irrespective of the subjects they took in secondary school. In Italy, large numbers from the classical stream go to science and engineering faculties. The syllabuses described must provide all secondary leaving-certificate holders with an adequate knowledge of science subjects.

The educational processes outlined above may be expressed as a series broken down into types of secondary school systems, starting with the lower, and progressively rising. For lower secondary this is clearly part of contemporary educational practice in Europe; but for upper secondary this will become general only over the next 20 years.

1. *Secondary education for some*

Secondary education is combined with terminal primary or higher elementary education. The majority of the age-group attends the latter, but only a small minority attends secondary school. Primary or elementary education is quite distinct from secondary education in the subjects taken, the level of education reached, and the teaching methods used. Examples are provided by the early stages of secondary educational development in most countries. In several Mediterranean countries, particularly Portugal and Spain, remnants of this system are still found.

2. *Secondary education for all*

A distinct break exists between primary and secondary education; the latter consisting of parallel types and schools. For example, the old English and Welsh system distinguishing secondary modern, technical and grammar schools; and that found in most of Germany, Austria, Switzerland, the Netherlands and Ireland. The large-scale development of technical-vocational education is frequently associated with this stage.

3. *Second-path and transfer possibilities*

Transfer facilities between these separate schools, so that misallocated pupils, late developers, or those who change their minds, can be transferred during or at the end of secondary school. For example, the contemporary Austrian and German system with its emphasis on transfer possibilities and common curricula.

4. *Common secondary school structures*

Integration of the parallel system into a comprehensive school structure. Streaming may take place within the school, e.g. first cycle of secondary education in the *Collège d'enseignement secondaire* in France, and the various plans for re-organising secondary education in the United Kingdom.

5. *Common secondary school courses*

The development of a structurally integrated system with a common curriculum, e.g. the comprehensive school in Sweden, the 8-year basic school in Yugoslavia and the middle school in Italy.

These examples refer to lower secondary education, but economic growth and increased upper secondary participation may mean that the same process takes place at upper secondary level, as for example in Sweden and Norway, which already have the beginnings of mass secondary education above age 16. The United States and parts of Canada and Japan have a common-type secondary school structure with much of the currilum education above age 16. The United States and parts of Canada and Japan have a common-type secondary school structure with much of the curriculum common to all pupils. Whether the parallel or the comprehensive system (stages 4, 5) would result in equality of educational opportunity, the better use of talent, flexibility of decisions, etc., is not known. In both the United States and Japan, where the common curriculum has been in force for some years, the recent trend is towards some form of streaming. The only thing of which we can be certain in Europe is that secondary education will need continuous revision and reform.

III

THE IMPLICATIONS OF QUANTITATIVE EXPANSION OF SECONDARY SCHOOLING FOR HIGHER EDUCATION

INTRODUCTION

The main conclusion of the previous discussion is that European education enrolments are growing and the systems changing, and that this growth and change are not peculiar to any particular country. Many countries, not only in the OECD area but throughout the world, can boast of a reduction in illiteracy, increasing shares of GNP devoted to education, and an ever increasing proportion of population enrolled in primary, secondary and higher education. Certain very general reasons have been given to explain this growth; increasing personal affluence and greater public wealth are two " economic " ones for example. However, the actual interplay of economic and education variables is very complicated. The role of education in stimulating economic development in poorer countries and creating the conditions for further economic advancement in rich societies is the most general. Mass consumption and mass leisure (at least in affluent societies) have also been used as arguments for giving education a critical role to play if the human potentialities of the developed industrial society are to be realised. These factors are by no means exhaustive. Nor would we wish to suggest that they are of equal importance in explaining the " educational explosion ", but simply that they are the sort of reasons given to explain the explosion.

To understand the pressures to expand *higher education* in European countries over the past decade a further (and different) type of analysis must be used, namely, the influence of the system of secondary education on demand or higher education, and the impact of structural changes on demand. This is not *instead* of the points raised in the first paragraph, but *in addition* to them. Although these influences are operative, they operate on an existing educational structure which may limit the extent and the style of that explosion. The second main conclusion of this report —the variety of structures in secondary education in Europe, and the range of recent changes in these structures—will be stressed, and also the fact that the type of secondary education structure largely influences or patterns the numerical increase in young people entering higher education. Perhaps even more important is that the future growth in student numbers is likely to be determined by the changes that have taken place in the structure of secondary education.

3

Table 57. POPULATION AGED 20 TO 24 IN 1950, 1965 AND 1980

	1950	1965	1980
Austria	497,900	577,205	551,619
Belgium	655,500	549,445 (1964)	616,167
Denmark	296,000	366,000	364,700
France	3,296,000	2,841,900	4,062,500
Germany	3,552,800	4,348,000	4,220,000
Greece	732,460	587,848	726,834
Canada	1,139,800	1,362,500	2,203,946
Iceland	n.d.	14,133	22,428
Ireland	202,200	188,000	295,000 (1981)
Italy	4,076,000	3,854,000	4,102,000 (1981)
Japan	7,710,000	8,634,400 (1966)	7,774,200
Finland	n.d.	353,220	408,344
Luxembourg	25,442	19,587	n.d.
Netherlands	800,200	902,900	1,139,100
Norway	232,000	261,900	304,900
Portugal	761,700	686,950	868,000
Spain	2,327,163	2,353,952	2,867,844
Sweden	459,300	569,758	523,583
Switzerland	349,800	364,300	411,800
Turkey	1,962,500	2,365,696	4,548,716
Yugoslavia	1,629,500	1,353,424	1,469,424
U.K.	2,995,000	3,633,000	4,123,000
U.S.A.	11,732,000	13,520,000	20,155,000
TOTAL *(in thousands)*			
North America	12,871.8	14,882.5	22,358.9
Europe	24,851.5	26,191.2	31,626.0
Japan	7,710.0	8,634.4	7,774.2
Total OECD area	45,433.3	49,708.1	61,759.1
Growth in Percentage	*(1950-1965)*		*(1965-1980)*
North America	15		50
Europe	5		21
Japan	12		–10
Total OECD area	9.4		24.2

Table 58 gives the numbers enrolled in, and projected for, all higher (or, for some countries, university) education, without distinguishing the different types of courses, their quality or their length. The table shows that in every country there has been considerable expansion in numbers enrolled. This expansion is likely to continue into the 1970's. Expansion was measured by taking 1955/56 as the base year (index 100) for student population. In Chapter I it was shown that in the great majority of countries higher education expanded at a faster rate than secondary, though in terms of absolute numbers the increases in the latter were, of course, more important. The great differences in higher education expansion rates as between countries bring out an aspect of the central problem we wish to discuss. It is difficult to see how the macro-arguments outlined above could explain these differences in past or projected rates of expansion, and a detailed analysis of the secondary education systems of individual coun-

TABLE 58. EXPANSION OF STUDENT NUMBERS IN HIGHER EDUCATION AND GROWTH INDICES (I, II)
(1955 = 100)

		1950/51	1955/56	1960/61	1965/66
Austria	Actual Numbers	20,710[1]	19,124	38,533	48,895
	Index	*108*	*100*	*201*	*256*
Belgium	Actual Numbers	35,033[2]	38,393	51,999	75,468[3]
	Index	*91*	*100*	*135*	*197*
Canada	Actual Numbers	—	72,737	113,864	178,238[3]
	Index	—	*100*	*157*	*245*
Denmark	Actual Numbers	19,946[1]	22,797[4]	33,275[5]	50,493
	Index	*87*	*100*	*146*	*221*
Finland	Actual Numbers	13,885	16,302	23,552	41,994
	Index	*85*	*100*	*144*	*258*
France (U)	Actual Numbers	145,865	152,246[6]	214,672[7]	367,000[3]
	Index	*96*	*100*	*141*	*241*
Germany (U)	Actual Numbers	116,896	150,165	202,321[7]	266,648
	Index	*78*	*100*	*135*	*178*
" (All higher)	Actual Numbers	246,090	332,795	408,616	512,208
	Index	*74*	*100*	*123*	*154*
Greece	Actual Numbers	n.d.	21,639	28,302	53,305[3]
	Index	n.d.	*100*	*131*	*246*
Ireland	Actual Numbers	8,351	9,481	12,405	17,910
	Index	*88*	*100*	*131*	*189*
Italy	Actual Numbers	221,850[1]	206,787	260,961	362,065
	Index	*107*	*100*	*126*	*175*
Japan	Actual Numbers	235,883	609,963	711,618	1,107,327
	Index	*39*	*100*	*117*	*182*
Luxembourg	Actual Numbers	99	81	151	408
	Index	*122*	*100*	*186*	*504*
Netherlands (U)	Actual Numbers	29,736	29,642	40,727	58,361[3]
	Index	*100*	*100*	*137*	*197*
Norway (U)	Actual Numbers	7,000[1]	5,600	9,600	19,637
	Index	*125*	*100*	*171*	*351*
Portugal	Actual Numbers	16,152	18,838	24,060	29,000[3]
	Index	*86*	*100*	*128*	*154*
Spain	Actual Numbers	54,605	61,167	76,458	112,541[3]
	Index	*89*	*100*	*125*	*184*
Sweden	Actual Numbers	16,887	22,647	36,909	59,643[3]
	Index	*75*	*100*	*163*	*263*
Switzerland	Actual Numbers	16,501	17,881	24,648	34,846[3]
	Index	*92*	*100*	*138*	*195*
Turkey	Actual Numbers	24,815	37,000	65,297	*97,300*
	Index	*67*	*100*	*176*	*263*
U.K.	Actual Numbers	—	106,000	151,100	n.d.
(England and Wales)	*Index*	—	*100*	*143*	n.d.
U.S.A.	Actual Numbers	2,296,592	2,678,623	3,610,007	5,570,271
	Index	*86*	*100*	*135*	*208*
Yugoslavia	Actual Numbers	45,041[2]	58,181	94,769	116,500
	Index	*77*	*100*	*163*	*200*

I. For certain countries enrolments for the specific years were not obtainable and therefore the nearest year was taken.

(1) 1951/52; (2) 1952/53; (3) 1964/65; (4) 1956/57; (5) 1961/62; (6) 1954/55; (7) 1959/60; (8) 1974/75.

II. For certain countries higher education includes university only.

(U) = University only.

tries should provide a better explanation. The table illustrates how great these differences are in countries where the macroscopic characteristics usually given as explanations of growth do not apparently present a consistent pattern of differences.

Between 1950 and 1970, the number of students is likely to increase roughly five-fold in Sweden and Norway, two-fold in Austria, and slightly more than this in Germany; in England and Wales, between 1955 and 1975, the number is expected to increase 3½ times. All these countries have increased their student enrolment, and anticipate further increases, but the rates of growth differ considerably. A better understanding of these differences can be obtained by first considering a series of pre-conditions affecting the number entering higher education (size of age-groups, criteria for eligibility, etc.) and then examing the impact of various types of secondary education on student enrolment. Here, the expansion of higher education is seen to some extent as a function of the secondary school system.

The extent to which the university system itself can affect the enrolments in higher education will not be discussed here. Admission policies, length of courses, failure rates, are all variables within the control of the higher education system, and exert a very direct influence on both the nature of secondary education (curriculum, teaching methods, etc.) and the sorts of aspirations and ambitions individuals have for future education. There will be no attempt to discuss or evaluate these influences or to show the influence of secondary education on the *demand* for higher education. We shall therefore give an unbalanced and partial picture of the process of social, economic and educational change engendering the growth in the numbers of those attending full-time education. Since we contend that educational structures affect both the pattern and volume of growth, the structure of higher education might be subjected to an analysis similar to the one attempted in this paper, but such an analysis goes beyond the purposes of this study.[1]

I. PRE-CONDITIONS FOR ADMISSION TO HIGHER EDUCATION

Before examining the influence of the secondary school structure on student numbers, three other types of influence might be touched upon: the size of the potential student age group, the minimum admission requirements and the kinds of institutions providing the qualifications required.

a) DEMOGRAPHIC FACTORS

Table 57 shows the size of the 20-24 age-groups in 1950, 1965 and 1980 (it is assumed that most of the students are recruited from this age-group). The increase in enrolment, between 50 and 200 per cent, cannot be explained by the demographic factor alone, which represents only 15 to 20 per cent, and even in those countries (France, Greece, Portugal) where there was a fall in the number of the 20-24 age-group, higher education enrolment increased.

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[1] In fact such an analysis is at present being undertaken under the programme of the OECD Committee for Scientific and Technical Personnel in a study of the systems of higher education in OECD Member countries.

For the period 1965-1980, the increase in the 20-24 year old population in the OECD area as a whole will again be around 20 per cent. Even if enrolment ratios remained static, the number of students would increase, and in some countries, such as the United States, France, Greece, Canada, the Netherlands, Portugal, increase considerably. However, greater demand will no doubt cause enrolments to increase much faster than they would on the basis of population increases alone. The forecasts even for years as near as 1970 or 1975 show that countries are fully aware of this perspective of further growth. Demographic evolution was shown (Chapter I) to be a predominant factor in further enrolment increases in secondary education, but this is not true of higher education, where the growth potential is still practically unlimited. For several decades to come, increased demand is expected to be the main cause of further enrolment increases.

The impact of the demographic factor in Member countries is by no means uniform in direction or intensity. In some countries, high post-war birth rates will cause an expansion in the 20-24 age-group in the next five years, followed by a slight decrease due to falling birth rates as from the late 1950's. In others, birth rates have continuously gone up, e.g. in the United States. A full assessment of the impact of the demographic factor would require a country-by-country analysis.

Variations as between countries in the impact of demographic and other factors contributing to increased enrolment are brought out by a comparison of Austria, Norway, and England and Wales. Table 59 gives the numbers aged 18 (roughly the age of university admission in these countries), one with a fast rate of expansion in higher education (Norway, although 18 is at least one year younger than the normal age of entry to higher education) one a medium rate (England and Wales), and one a slow rate (Austria).

Table 59. SIZE OF THE 18 YEAR OLD AGE-GROUP

	1950	1955	1961	1965	1970	1975
Norway	44,700	39,100	42,900	61,000	57,900	60,200
England-Wales	n.d.	642,000	654,000	963,000	742,000	782,000
Austria	93,000	81,200	112,000	105,300	93,800	114,000

A simple comparison between Austria and Norway is very informative: between 1950 and 1955, the number entering university fell, in step with the decline in the size of the age-group. During the next five years, admissions in Austria doubled, in Norway they increased approximately 2½ times (although 18 year olds in Norway increased by roughly 10 per cent), and in Austria by nearly 40 per cent. In both countries:

i) the number of students increased;

ii) the increase was affected by the size of the age groups, and,

iii) only part of the increase is explained by demographic factors. In Austria, demographic factors account for a bigger part because the demographic change is greater and the student expansion smaller than in Norway. Between these two lies England and

Wales where, from 1955 to 1961, there was a slight increase in the age-group (around 2 per cent) but a considerable expansion in student numbers (in one university about one-third, and in higher education nearly one half). However, in the early sixties, demographic pressures were considerable (an increase of 307,000 or 45 per cent in the age-group between 1961/65) and therefore account for much of this expansion.

b) CHANGES IN ADMISSION REQUIREMENTS

Changes in admission requirements for higher education in general and for the university in particular are a second complicating factor. Two broad types of such changes are:

i) Those which authorize other than traditional secondary education diploma holders to enter the university or higher education. For example, in Belgium, prior to 1965, graduates from secondary technical education were not admitted to the universities. After the reform of university admission regulations in that year ("le nouveau régime d'accès aux études universitaires") they became eligible and eventually in addition to the 21,000 secondary general school certificate holders, a further 12,000 from technical secondary schools were entitled to seek admission to higher education. In Yugoslavia, until 1958, certificate holders from the technical *gymnasium* were not eligible to enter the university. After this date their qualifications had the same admission value as those of persons leaving the general *gymnasium*. In Italy, as from 1961, technical institute certificate holders have access to certain university faculties.

ii) The introduction into secondary education of new streams and courses, thus widening the choice of subjects in schools traditionally preparing for higher education. For example, prior to 1958, there was only one type of *gymnasium* in Yugoslavia; after the reform, specialised *gymnasia* were set up for languages, mathematics, sciences, etc. In Spain, in 1953/54, a division was made between sciences and other subjects. This is part of a more general trend to give scientific and technological subjects a firmer footing in the schools traditionally dominated by classical humanities. In Sweden, the 1966 reform integrated the three types of *gymnasia* into a single institution to ensure wider participation in the commercial and technological streams. Finally, new streams have been created in secondary education, and include new subjects such as the social sciences (e.g. the new social study courses in France).

This list of changes affecting admission to higher education is by no means exhaustive.

c) NEW FACILITIES

The creation of alternative methods to the classical one of obtaining a secondary school leaving certificate constitutes a second type of reform. Examples can be given of such changes, although not a systematic assessment of their impact on student numbers. For England and Wales, the minimum admission requirements for the university are two passes at general certificate advanced level: between 1955 and 1960 the percentage of the age-group meeting such requirements increased from 4.6 per cent to 6.5 per cent, the majority taking their examination in traditional grammar schools. However, in addition to these, 0.2 per cent of the age-group in 1955/56 and 0.4 per cent in 1960/61 qualified in institutions of further education or, in other words, outside the traditional selective school system. Earlier mention was made of similar German facilities, the *Abendgymnasium* and the *Kolleg*, where pupils who did not enter the gymnasium at the normal age, or who left before taking the *Abitur*, can take this examination and gain admission to higher education. German statistics suggest that the use of this type of facility will increase considerably: in 1960, 916 persons obtained either the *Kolleg* or the *Abendgymnasium* leaving certificate, in 1970 the authorities anticipate this number will rise to 2,300. This is still no more than a small percentage of those obtaining the *Abitur* (70,770 are expected from the traditional *gymnasium* in 1970), but such changes do widen the scope of admission to higher education and so stimulate the expansion of student numbers. The Austrian reforms, which culminated in the 1962 Education Act, facilited admission to " higher " education by allowing children to transfer from the " short " general secondary school (*Hauptschule*) to the lower cycle of the " long " general secondary school (*Mittelschule*) after the normal admission age (10-11). Certificate holders from other types of secondary schools (rural grammar schools and grammar schools for the employed) were granted admission to higher education and also those from a variety of specialised secondary schools (teacher training colleges, business academies, technical schools, etc.). Again no figures are available concerning the impact of such changes on the number of admission to higher education but overall enrolment is clearly affected. For example, in 1964/65, 6,784 enrolled for the first time in higher education, whereas in 1963/64, 6,109 pupils obtained the general grammar school leaving certificate. There were thus 675 additional admissions (or roughly one-tenth of the total) who came from specialised secondary schools.

II. THE INFLUENCE OF SECONDARY SCHOOL STRUCTURES

Although argument by means of *ad hoc* illustrations and examples is both limited and dangerous, these serve to show that the expansion in student numbers must take into consideration: demographic factors, changes in admission requirements and the differences in the institutions preparing students. Only when we know the influence of these changes can the impact of the macro-factors mentioned be shown. In short, the existing structure of secondary education plays an important part in determining the pace of expansion of higher education.

Three inter-related factors are thus shown to determine university admission:

i) The percentage of those with secondary education leaving certificates who enter higher education. This will be called the *transition rate;*

ii) The percentage of first year admissions to secondary education who subsequently obtain the leaving certificate. This might be called *secondary survival* rate;

iii) The percentage of the age-group admitted to the type of secondary education traditionally preparing for higher education. This will be called *secondary admission rate*.

The influence of these factors on admission varies according to country. Hypothetically, student numbers could be increased by any one or by a combination of the following:

a) an increase in transition rates,
b) an increase in survival rates,
c) an increase in admission rates.

a) TRANSITION RATES

The concept of transition is deceptively simple; in reality it is a very complex empirical entity. We must first decide the types of secondary certificate holders we are considering and then the types of higher education they enter. We shall consider the situation in Sweden, Yugoslavia, Italy, England and Wales. The transition rates between types and streams of secondary school to university may vary enormously. Prior to the 1966 reforms in Sweden the transition rates from the then three types of secondary school were as follows for 1958 to 1961:

TABLE 60. SWEDEN: TRANSITION RATES FROM SECONDARY TO HIGHER EDUCATION

	GENERAL	TECHNICAL	COMMERCIAL
1958/59	90.5	37.4	8.2
1959/60	90.9	33.4	9.0
1960/61	94.4	27.0	4.2

Although all three groups of students have equal right of admission to the university, we find that almost all the general secondary leaving certificate holders enter, but only from one-third to one-quarter of the technical school certificate holders and less than a tenth of those from the commercial stream. The only way to increase the number of university admissions from the general secondary schools would therefore be to expand these schools or reduce drop-outs there. An increase in the transition rates from the other two schools would, however, increase university admissions.

In Yugoslavia, nearly nine out of ten leaving certificate holders from the general *gymnasium* enter higher education within one year after leaving school, and roughly one in three from the technical school. The ratio of general to technical certificate holders has changed over time so that the overall transition rate has also changed. In 1957/58 there were 25,339 certificated leavers from the two types of secondary school; in 1962/63 the number had increased to 39,142, and virtually all the increase was in the technical *gymnasium*. Therefore, although the overall transition rate has fallen from 72 per cent to 57 per cent, that for the general *gymnasium* had actually fallen from 96 per cent to 91 per cent, and that for the technical *gymnasium* had increased from 32 per cent to 35 per cent. This particular example emphasizes the need for caution when examining transition rates over time. With a selective system of secondary education, and differential rates of transition to higher education, simple changes in the relative popularity of different streams may change the overall transition rate.

In Italy, in 1964/65, there were slightly fewer than 82,100 entrants to university (*Diplomi and Altro titolo a titolo non indicato* are excluded). Of these, only one half came from selective secondary general education, nearly a quarter from teacher training institutions and a slightly larger proportion from technical schools. Of the 27,928 first-year students who came from classical secondary streams, 10,961 entered science, engineering and medical faculties. These figures suggest that, in addition to overall transition rates from secondary to higher education, separate estimates should be made concerning the faculty entered in relation to the subjects taken in secondary schools. Comparisons must be standardised by relatting the type of secondary school course to admission to higher education, in particular for those countries where every secondary school certificate gives access to any faculty.

Similarly, a distinction must be made between types of higher education. Many countries have a very varied system, and certificated secondary school leavers may enter one of several types of institution. England and Wales provides an example of this: if two " A " levels are taken as the admission requirement for universities (and this was the criterion the Robbins Committee suggested) then the percentage of the eligible candidates who actually entered the university fell virtually each year between 1954 and 1961. In 1954, 72 per cent of pupils with 2 " A " levels entered the university, in 1959, the percentage was 65, and by 1961 had fallen to 59. However, if higher education as a whole is taken instead of universities, then the transition proportion remain high. Table 61 shows the percentage of school leavers in 1963/64 with 2 " A " levels who entered university, colleges of advanced technology (CAT) colleges of education (CE) or other full time further education (FE). Also, it is possible that those two entered the labour market may return to full-time study, so that this table gives only an impression of the *immediate* transitions to higher education; the actual rates may be higher as people return to higher education from the labour market.[1]

TABLE 61. ENGLAND AND WALES:
ADMISSIONS TO HIGHER EDUCATION

PERCENTAGE OF THOSE WITH TWO OR MORE " A " LEVELS ADMITTED TO:

	UNIVERSITY	CAT	CE	FE	LABOUR MARKET
1963/64	52	4	10	12	22

Had transition only to the university been considered, then the rate for England and Wales would have been low compared with France (where virtually all secondary school graduates enter university) or Germany (where between 80-90 per cent of students taking the *Abitur* go on to university). If all forms of higher education are considered, the immediate transition rates approach those of France. All forms of both secondary and higher education must be considered if the calculations are to be of value.

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[1] In many countries a large number of secondary certificate holders do their military service before starting advanced studies.

The changes (discussed in the previous section) in conditions prior to admission, and the increasing variety in the types of higher education institutions, have made correct transition rates very difficult to calculate. The present methods of collecting, analysing and presenting educational statistics, make it impossible to complete comparative studies of transition proportions for different types of education, or to analyse the impact of changing transition rates on the expansion of student numbers. However, it is clear that for the general *gymnasium* in Sweden and Germany, where the transition proportion is already over 80 per cent, and for the French *lycée*, where it is nearly 100 per cent, any increase in the number admitted to higher education can be achieved only by increasing the number entering or surviving selective secondary education. This is in direct contrast to the situation in technical education in Sweden, where two out of three certificated leavers go directly to the labour market. In the Netherlands, less than half the secondary school certificated leavers do in fact continue their studies.[1] In 1950, there were 10,197 certificated leavers from secondary schools (*gymnasium*, HBS, MSVM, and HDS) but only 4,441 first-year students in higher education. In 1963, these numbers were respectively 19,443 and 9,499. A study of certificated secondary school leavers in 1960 suggested that 60 per cent males and 22 per cent females went on to higher education, and a further 17 per cent males and 26 per cent females to other forms of further education[2]. This example from the Netherlands is interesting, since it shows that in this country, in the future, a further large-scale increase in the number of first-year students could be brought about by increasing the transition rates.

For male certificate holders from the *gymnasium* there is little room for further expansion in the transition rates (and therefore in the numbers entering the university). Already four out of five in the humanities and nine out of ten in the sciences go on to university (for girls seven and eight out of ten respectively). The position in the HBS is different: even in 1960, only three out of ten male and one out of ten female certificate holders entered university from the humanities, and nearly two out of three males and one out of three females in the sciences. Therefore, an increase in the transition rates would affect HBS more than the *gymnasium*, humanities more than arts, and girls more than boys. It would probably create recruitement difficulties for the other types of further education to which many of these potential university students now transfer. The new Dutch secondary school legislation known as the " Mammoth Law " clearly separates secondary courses preparing for university-level education from those preparing for other types of further education.

The question of the " quality " of the new entrants must also be considered. If, as suggested by a study in the Netherlands, those who do not go on to higher education are usually those with the poorer school

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[1] Source for these and following data on the Netherlands: *De ontwikkeling van het onderwijs in Nederland*, 1966.

[2] In addition, 3 per cent of the males and 8 per cent of the females went to secondary technical or vocational schools; 21 per cent of the males and 44 per cent of the females did not go to any registered further education.

TABLE 62. NETHERLANDS: TRANSITION RATES
FROM GENERAL SECONDARY
TO UNIVERSITY-LEVEL EDUCATION

	HUMANITIES		SCIENCE	
	1956	1960	1956	1960
GYMNASIUM				
Boys: Total leaving certificate holders	730	920	845	1,110
Transfer	75 %	79 %	88 %	92 %
Girls: Total leaving certificate holders	515	680	320	410
Transfer	66 %	71 %	72 %	78 %
HBS (MODERN GRAMMAR SCHOOL)				
Boys: Total leaving certificate holders	1,565	2,120	3,170	4,240
Transfer	26 %	30 %	60 %	62 %
Girls: Total leaving certificate holders	740	920	590	730
Transfer	11 %	10 %	38 %	37 %

performance, then expansion by increasing the transition rate might mean a lower quality of the entrants. In England and Wales less than one in three school leavers with 3 " A " levels went to work or to full-time further education (FE) (that is, they were the potential source of university, CAT or CE admissions); for leavers with one " A " level the corresponding figure was more than two out of three. In both the Netherlands and England the tapping of this source of " qualified " school leavers for higher education may mean a deterioration in the quality of the entrants.

b) INCREASED ADMISSION AND SURVIVAL RATES IN SECONDARY EDUCATION

Expansion has been achieved by increasing (a) survival rates, e.g. Austria, and England and Wales, and (b) the number of admissions to secondary education, e.g. Germany and the Netherlands.[1]

The considerable expansion which has taken place in student numbers in England and Wales has been shown in Table 58; the percentage of the age-group entering the grammar school (i.e. the state school giving access to higher education) however, has remained stable. In 1953, the proportion of pupils aged 13 in grammar schools was 16.4 per cent; in 1955, 16.5 per cent; in 1959, 16.0 per cent; in 1962, 15.7 per cent. The slight decline in the percentage enrolled is offset by the increase in comprehensive schools over the period (from 0.7 per cent in 1953 to 5.5 per cent in 1962) where grammar school type courses are offered. The survival rate increased considerably however, as shown in Table 63.

Therefore the expansion in student numbers in England and Wales has been largely the result of demographic factors and of the higher proportion staying in selective education until their 17th-18th birthday.

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[1] This leaves out of consideration the development of alternative channels to higher education discussed previously, and also demographic change.

TABLE 63. ENGLAND AND WALES: PERCENTAGE OF 13 YEAR OLD PUPILS IN GRAMMAR SCHOOLS WHO STILL ATTEND THREE, FOUR OR FIVE YEARS LATER
1953-1960

PUPILS AT SCHOOL, AGED 13	1953 (100 %)	1955 (100 %)	1957 (100 %)	1959 (100 %)	1960 (100 %)
Aged 16 (i.e. 3 yrs. later)	56.0	60.4	69.0	68.6	72.7
Aged 17 (i.e. 4 yrs. later)	31.8	36,2	43.8	45.5	48.7
Aged 18 (i.e. 5 yrs. later)	13.1	14.1	16.8	17.2	n.d.

In Austria, the number of *maturanten* increased from 3,259 to 7,490 between 1956 and 1966 and the projected increase for 1976 is 12,750. This is an increase from 3.9 per cent of 18-19 year olds in 1955, to 7.0 per cent in 1966 and 11.4 per cent by 1976. Again the increase is mainly due to an improved survival rate.

TABLE 64. AUSTRIA: PERCENTAGE OF THE 12 YEAR OLD AGE-GROUP IN GENERAL SECONDARY SCHOOL, AND OF THE 17 YEAR OLD AGE-GROUP STILL ATTENDING FIVE YEARS LATER 1950/51 TO 1970/71

	1950-51	1955-56	1960-61	1965-66	1970-71
12 year olds in General Secondary	9.7	13.9	12.4	14.1	15.3
17 year olds in General Secondary 5 years later	2.91	7.25	8.95	11.33	13.25
Survival	30	52	72	80	85

Some increase of enrolment rates in the 12 year old age-group is anticipated in general secondary education; as the increase between 1950 and 1955 was largely accompanied by a decline in the size of the age-group, the absolute numbers in this type of education remained fairly constant. Survival of youngsters in the school however, has changed from one out of three admissions to eight out of ten.[1]

In Germany the admissions index used is the percentage of the age group in the *quartaner* or third grade (the *sexta* being the lowest) and certificated leavers have been shown as a percentage of the age-group obtaining the *Abitur* 6 years later.

There was roughly a 50 per cent increase in the number of *gymnasium* admissions between 1951 and 1956, but the percentage of those who successfully completed the course remained constant over the five year period; the number of graduates therefore increased as a result of the expansion in admissions.

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[1] Part of this higher " survival rate " is due to an increase in the number of later transfers to general from other types of secondary schools. Many more pupils from the non-academic general course (*Hauptschule*) are transferring to the new *Musisch-pädagogisches Realgymnasium* for example.

TABLE 65. GERMANY: PERCENTAGE OF THE AGE-GROUP IN THE GYMNASIUM 1951 TO 1966

	1951	1952	1953	1964	1965	1966
Quartaner	12.3	13.4	14.4	15.5	17.1	18.2
Abitur	4.7	4.8	5.1	5.5	6.1	6.8
Survival	38	36	35	36	36	37

The recent history of this level of secondary education in the Netherlands (VHMO) is similar to that of the German system. Between 1950 and 1964 the percentage of the age-group admited to VHMO increased from 9.7 per cent to 17.6 per cent and, in absolute numbers, from 15.880 to 38.899.

TABLE 66. NETHERLANDS: SURVIVAL RATE IN GENERAL SECONDARY SCHOOLS

	1950	1952	1956	1958
12-13 year olds	9.7	10.9	14.3	18.9
17-19 year olds with leaving certificates	6.6	7.4	18.7	8.5
Survival	68	68	62	57

In the Netherlands, an expansion in both pupil numbers and enrolment ratios has recently taken place, accompanied by a lower survival rate. Although the absolute number of certificated leavers increased, the survival rate fell from 68 per cent for those who had entered general secondary school in 1950 to 57 per cent for those who entered in 1958.[1] The slight increase in transfer rates as shown in Table 62 explains only a small part of the increase in the number of university admissions, these being mainly due to a larger age-group, and a bigger percentage entering selective secondary education.

All four countries have preserved a system of secondary education where selection is made at a relatively early age (between 11-13) and where attempts have been made to permit subsequent transfer to general secondary streams in addition to opening up other paths to higher education. In parts of Germany and of England and Wales a start has been made in the development of comprehensive school structures. For the period under consideration, however, the parallel system, with early selection, was most typical.

c) CHANGES IN LOWER SECONDARY EDUCATION

In other countries, where complex reforms are in progress, the situation is not so simple. France is a case in point: because of a series of reforms in 1959 and 1964, it is difficult to make comparisons over time and the notion of "survival" and "admission" rates loses much of its significance.[1] The number of *bacheliers* has increased considerably: 32,362 in 1950, 39,258 in 1955, 59,287 in 1960, 96,924 in 1965 or from 4.8 to 11.3 per cent of the 18 year olds between 1950 and 1965. The increase in admissions to secondary schools preparing for the *baccalauréat* is more important than "survival" within the system. Between 1950/51 and 1962/63 the number of pupils in the "sixième" (first form) of the public *lycée* increased from 65,200 to 161,000. Over the same period the percentage of the age-group in the "sixième" in public and private *lycées* and CEG increased from 30 to 56 per cent.

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[1] See Chapter I, Efficiency, Wastage, Failures and Drop-outs.

Norway has also reformed secondary education by extending the period of common schooling. The reform was at first on a voluntary basis, so that only parts of the country had introduced the new 9-year common school during the period under review. The number of pupils in the final year of the *Realskola* added to those in the first year of the new *gymnas* (i.e. the tenth grade, or one year after the nine-year compulsory schooling) gives us an idea of the extent to which lower secondary education is affected. Table 67 shows each of these two figures as a percentage of the 16½ year old age-group.

TABLE 67. NORWAY: RETENTION IN GENERAL SECONDARY EDUCATION

	a. NUMBER, AND AS PERCENTAGE OF THE AGE-GROUP IN 10th YEAR (16 ½ YEAR OLDS)						*b.* PERCENTAGE AGE-GROUP OBTAINING LEAVING CERTIFICATE FROM GYMNAS 3 YEARS LATER (19½ YEAR OLDS)	*c.* b AS A PERCENTAGE OF	
	1. REALSKOLA		2. GYMNAS		3. TOTAL			*a.* 2.	*a.* 3.
1950	6,832	17.3	3,541	8.9	10,373	26.2	9.6	105	36
1955	8,928	20.6	5,049	11.6	13,977	32.2	12.0	106	38
1960	15,571	28.0	9,697	17.4	25,268	45.4	17.3	105	38
1963	18,984	28.6	12,676	19.1	31,660	47.7	19.6	103	39

In the third column the number of *gymnas* certificated leavers is shown as a percentage of the 19½ year olds three years later. The "retention" rate is obtained by comparing the 19½ year old percentage with that for the 16½ year olds three years earlier. The fact that this is over 100 per cent is due to late admission and to students who did not follow the normal course in the *gymnas* but took the *examen artium;* these represent approximately 10 per cent of the total number of certificated leavers. The actual *gymnas* survival rate is generally around 90 per cent. The second percentage (*b.* as percentage of *a.* 3) is not a "survival" rate in academic secondary schooling, but a retention index of general secondary schools as a whole. This "retention rate" has remained fairly constant over the years, whereas the proportion in secondary schools has nearly doubled. Survival rates in the *gymnasium* have remained very high. The greater number of graduates is due mainly to the increase in enrolment ratios: *gymnasium* admissions went from one in ten or eleven in the early fifties to one in almost five in 1963. In 1966, 23.5 of the 16 year old were admitted. The structure of the Norwegian system and the changes introduced make comparison with the Netherlands, Germany, Austria, or England and Wales impossible, since admission rates refer to the 10-12 year age-groups in these countries and to the 14-15 year group in Norway.

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[1] The effect of class-repetition on the average age of pupils in secondary education in France was discussed in Chapter I of this report.

For the same reasons, comparison with Sweden is difficult. The reform of primary and lower secondary education into a 9-year common school became general only in 1959, although in parts of Sweden the scheme was introduced earlier in the 1950's. This reform means that young people do not enter the *gymnasium* until the age of 16; prior to that, any streaming (which is very limited until the 9th grade) is within the school. Consequently, admission to secondary education giving access to higher education affects the 16-17 year olds. Survival and admission, in the sense discussed earlier, are almost the same thing but, as for Norway, the increase in certificated leavers is due to the increase in admissions (see Table 68), since the survival rates actually fell from 76 per cent to 70 per cent.

The extension of common schooling in Sweden means that the admissions data in Table 68 refer to upper secondary education.

TABLE 68. SWEDEN: RETENTION RATE OF THE GYMNASIUM

YEAR	PERCENTAGE OF 16-17 YEAR OLDS IN GYMNASIUM	PERCENTAGE OF 19-10 YEAR OLD CERTIFICATE HOLDERS 3 YEARS LATER	PERCENTAGE SURVIVAL
1950	10.7	8.1	76
1955	14.1	10.4	74
1959	19.0	13.7	70

III. CONCLUSION

Student enrolments have expanded in Western European countries but the expansion is not due to a uniform pattern of change in secondary education. Without touching on demographic factors or different forms of transition from secondary to higher education, three different expansions have been described:

i) Systems in which selection is postponed until well into the period corresponding to secondary schooling, e.g. France, Norway, Sweden. This has resulted in a rapid increase in the percentage entering upper secondary education largely because decisions to enter are made in mid-adolescence and the entire age-group, in principle, is still eligible for admission to academic type courses. The rate of attrition has remained constant, but may have increased for Sweden.

ii) Systems in which the increase in the number of certificated upper secondary school leavers is due to an increase in admissions 6-8 years earlier, e.g. Germany and the Netherlands. Early streaming has been preserved, but more go to academic secondary education.

iii) Systems in which there was little change in admissions, as a percentage of age-group, to lower secondary education, the increase in certificated leavers being due to an improvement in survival rates, e.g., Austria and England and Wales. Again, early selection is preserved, and only a small percentage attend academic courses, but their rate of attribution has been considerably reduced.

These three types of change in educational participation raise doubts as to the usefulness of the traditional pyramid of secondary educational enrolments, i.e. one in which the number of survivors is reduced each year. In Germany and the Netherlands the base of the pyramid has been made larger and, as the percentage of drop-outs remained unchanged, there has been some increase in the number of pupils. In England and Wales, the base has remained unchanged, but drop-out has been reduced so that the number of those completing the course increased, i.e. the model becomes a rectangle rather than a triangle. Some countries have both widened the base of admission to upper secondary education by ensuring 100 per cent participation in lower secondary education and by making other structural changes which enable young people to enter academic secondary schools in mid-adolescence. As a result, admission to—and attendance in—all years of upper secondary school has been increased.

Some countries not considered here might also be classified in the categories suggested above; Italy and Yugoslavia and, for different reasons, Japan, the USA and Canada fall in the first category. In Italy the *scuola media,* and in Yugoslavia the compulsory common school, continue until pupils are 14-15, so that decisions concerning the type of secondary education a child will receive are left until he reaches mid-adolescence. The situation is clearer in North America because the period of secondary schooling consists of a high or common school.

In Denmark, there was little change between 1951 and 1961 in the percentage of the age-group in the first grade of secondary school. In 1951, 33.3 per cent of the 12 year olds were in this grade, in 1956, 36 per cent, and in 1961, 35 per cent. However, for the same period, the percentage of 16 year olds in the first grade of *gymnasium* was 5.4 in 1951; 5.8 in 1956; 9.0 in 1961 and 11.4 in 1965. There was little change in the initial entry to lower secondary education, but an increase in the proportion entering upper secondary. In addition, nine out of ten entrants to upper secondary school continue to the third and final years (between 1956 and 1961 the actual percentage was either 87 or 88 each year), so that survival in upper secondary education has remained constantly high.

TABLE 69. BELGIUM: RETENTION RATES IN SECONDARY EDUCATION

YEAR	PERCENTAGE OF AGE-GROUP IN:				"SURVIVAL" RATES AS A PERCENTAGE OF ENROLMENT IN 1ST GRADE LOWER SECONDARY		
	1ST GRADE LOWER SECONDARY SCHOOL 1	1ST GRADE UPPER SECONDARY SCHOOL 2	CERT. LEAVERS FROM UPPER SECONDARY 3	ENTERING UNIVERSITY 4	2 AS % of 1	3 as % of 1	4 as % of 1
1955	41.7	16.5	13.6	6.9	40	33	17
1956	42.7	17.8	15.1	7.4	42	35	17
1957	44.0	19.7	16.2	7.5	44	37	17

The situation is more complicated in Belgium, where there are both increased admission rates and improved survival rates, as shown in Table 69.

During this short, three-year period there was an increase in both admissions and survival rate. The proportion of the age-group entering lower secondary education increased from 42 to 44 per cent, and that of those entering upper secondary from roughly one in six to one in five. This is the only example of all the countries examined in which both trends can be detected.

IV. IMPLICATIONS

The difference between the first type of expansion (postponed selection) and types (*ii*) and (*iii*) (changes in admission and survival rates) is important, since these represent different mechanisms in the past and future expansion of higher education. Changes in admission and survival rates do not require any fundamental reform of secondary education. In practice, a long period of selective secondary education is preserved with larger admission and improved survival rates. Mechanism (*i*) above, however, requires the reconstruction of secondary education.[1] For the European system, secondary education becomes integrated with upper primary. Streaming takes place during mid-adolescence, about the age when compulsory schooling ends, thus implying that decisions concerning streams, courses, etc., are postponed until towards the end of compulsory schooling. The notion of a distinct group of potential university candidates therefore becomes obsolete: potentially the entire age-group are applicants for upper secondary, and therefore for higher, education. This is in marked contrast to systems having relatively early selection and a parallel structure of secondary schooling and in which potential candidates for higher education are already, by the age of 11 to 13, a clearly distinct group. The size of this group will vary only as a result of changing survival rates during the secondary period.

The changing of survival and/or admission rates has a relatively slow impact on the number going on to higher education. Secondary admissions in the Netherlands, Germany, Austria and England and Wales, will be eligible for university only in 6 to 8 years, so that higher education has plenty of warning of any changes in the number of potential entrants. Also, there are obvious limitations to improvements in the survival rate. In most systems of secondary education the percentage of repeaters and of drop-outs is remarkably stable and is perhaps to some extent inevitable. Changes in admission and/or survival rates will have a gradual and easily recognised impact on higher education, but this is not necessarily true of the impact of structural reforms of secondary education where it may be both rapid and strong, as in France. As can accurate transition rate to higher education cannot be given for France, since first-year enrolments include repeaters, and students may be enrolled in more than one institution or one faculty,[2] the number of certified secondary school leavers (*bacheliers*) has therefore been used. Table 70 shows that the increase in *bacheliers* between 1955 and 1965 is due to the large number of examination candidates.

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[1] See Chapter I.

[2] An OECD report shows that in 1963/1964 there were 100,615 registrations in the first year of university, but that only 70,444 students were enrolled for the first time.

TABLE 70. FRANCE: CERTIFICATED SECONDARY SCHOOL LEAVERS (" BACHELIERS ")

YEAR	PASSED EXAM	PERCENTAGE OF CANDIDATES WHO PASSED EXAMINATION IN THAT YEAR
1955	39,258	64.5
1960	59,287	73.0
1965	96,924	61.0

Source: Informations statistiques.

This increase in the number of candidates to the *baccalauréat* reflects that in student numbers in the *lycées*: from 791,000 in 1954/55 to 1,597,492 in 1964/65. Table 71 shows the extent to which this expansion was due to the increase in enrolment.

TABLE 71. FRANCE: ENROLMENT RATE AS PERCENTAGE OF AGE-GROUP IN " SIXIÈME " (FIRST GRADE), " SECONDE " (FIFTH GRADE) AND " CLASSES TERMINALES "[1]

	1958/59	1960/61	1962/63	1964/65
" Sixième "	45.2	49.6	56.2	63.8
" Seconde "	27.9	30.4	32.1	33.3
" Classes terminales "	13.7	18.5	19.6	21.1

[1] Incl. for public education: *lycées, collèges d'enseignement général, collèges d'enseignement secondaire, écoles normales d'instituteurs;* for private: *lycées, cours complémentaires.*

Source: Tableaux de l'Éducation nationale, 1966, Ministère de l'Éducation nationale, Paris.

Of all European countries, France has perhaps had the largest recent increase in the number of certificated secondary leavers, giving rise to an enormous growth in higher education admission. From 1960 to 1963, the number of first year students increased by more than 50 per cent, i.e. from 44,970 in 1960/61 to 70,444 in 1963/64. Between 1959/60 and 1964/65 the total number of students increased from 214,672 to 366,699. These figures show the growth potential in an educational system which is changing its secondary structure, and by postponing selection, putting off the moment when decisions concerning courses must be made, at the same time as the age group increases as a result of the post-war baby boom.

In France, there is still only a small minority of the population which becomes sufficiently qualified for admission to higher education. In 1965, although only one young person in nine passed the *baccalauréat*, this represented a considerable increase over a five-year period; in combination with the larger age-group the result was a 50 per cent increase in university admissions. There is thus considerable potential for the further expansion of enrolment ratios as the North American and Japanese figures show. Table 72 gives the subsequent survival rate in the United States for those entering the 5th grade (or lower secondary education in Europe).

Table 72. UNITED STATES: SUBSEQUENT SURVIVAL RATES IN SECONDARY EDUCATION PER 1,000 PUPILS IN THE 5th GRADE

YEAR	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	HIGH SCHOOL CERTIFICATES	COLLEGE STUDENTS
1950	1,000	981	968	921	886	809	709	632	582	308
1952	1,000	974	965	936	904	904	746	667	621	328
1954	1,000	980	979	948	918	918	759	684	642	343
1956*	1,000	985	984	948	930	930	785	724	667	357

* (Preliminary).

Source: Statistical Abstract of the United States, 1965.

The rate for certificated secondary leavers, which was already high in 1950, had even further increased by 1956, so that the rate for transition to university rose from 31 to 36 per cent (see the last column) in six years, and the growth potential of the United States higher education is still very great. First time enrolments, which were approximately 781,000 in 1958, rose to 1,313,000 in 1964, and are expected to be 1,762,000 in 1975, or about 45 per cent of the age-group.[1]

These examples show that, by changing admission to selective secondary education as has been done in France, Sweden, Norway and Yugoslavia, the growth potential of higher education is considerably affected. Although higher education admission rates will not immediately reach those of the United States, Canada or Japan, they begin to approach them. Already, France, Sweden and Yugoslavia are beginning to feel the pressure, and today's performance is only a forerunner of tomorrow's potential? Sweden has already had some warning of this potential: common schooling lasts for nine years, until the pupil is 16. The first six years are unstreamed; in the 7th grade the pupils have some choice in the number of foreign languages. By the 9th grade (i.e. 15-16 year olds) streaming into 9 separate groupings is possible. Five of these give access to the *gymnasium*, and one was designed with the general (or academic) *gymnasium* in mind. The first pupils to attend the 9-year common school have in fact just moved into upper secondary education. They appear to have preferred the courses giving access to the *gymnasium:* in 1964, 74 per cent chose these options and in 1965, 78 per cent whereas in 1960, 54 per cent chose the 5 academic options.

Although Sweden may be exceptional, this example shows possible growth once all pupils are granted access to academic education in mid-adolescence. The type of structural reform taking place in such countries as Norway, Sweden, France and Yugoslavia may cause an unprecedented increase in the number of those wanting higher education. Expansion can be controlled by: limiting admissions to upper secondary education (in Sweden a ceiling has been put on the *gymnasium* admissions), lowering the survival rate, and making university entrance requirements more difficult. Positive inducements to enter other types of secondary education than *gymnasium* might also be given.

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[1] Data from *Estimating Future School Enrolment in Developing Countries*, UNESCO (May 1966).

Changes in secondary education have been shown to have a quantitive influence on the demand for higher education. Although they also affect quality—for the intellectual standard attained by the entrants, the type of subjects chosen, and the teaching methods required will all be influenced —it has not been possible to separate the effects due to these changes from those due to other causes.

Changes in the structure of secondary education and in the numbers attending have caused many educationalists to fear that standards would be threatened. Similar fears are also expressed concerning higher education. For, some such wholesale and rapid expansion is bound to cause the quality of the students or the education provided to deteriorate. It is too soon to reach a conclusion about this but the Robbins Committee were convinced that in England and Wales there could be a considerable expansion of higher education without any threat to standards. In an often quoted phrase, the pool of intellectual ability is shown not to differ from the widow's cruse: " when more is taken for higher education in one generation more will tend to be available in the next ".

The effect of expansion on the subjects taught in higher education and the teaching methods used means that contemporary and future students will differ in certain aspects from their predecessors. Changed systems of secondary education will produce students whose intellectual tastes and methods of learning are very different, as can already be clearly seen by the shift in subjects chosen by students in higher education (shift from the traditional arts and sciences to the newer social sciences) and the insistent demands for changes in higher education (often expressed by strikes and outbreaks of violence). These developments are only partly the result of new types of pupils, with different tastes and from changed secondary school systems. Comparisons between the past and future systems of higher education become more and more pointless as a result of the changing nature of higher education, the changed interests of students, and the change in objectives and values which are the basis and the result of these changes. A different secondary education is producing a higher education which is qualitatively different, and therefore not able to be compared. Expanding secondary school enrolments will not only greatly increase the pressure for admission to higher education: tensions and embarrassments will be created by the disparity between demand and limited resources for expansion.

IV

RESOURCES AND POLICY IMPLICATIONS OF SECONDARY SCHOOL CHANGES

INTRODUCTION

Both the expansion in pupil numbers and the change in the nature of secondary education have implications for contemporary educational policy and practice, the clearest and most urgent of which is the pressure of educational expansion on resources. Ultimately, much of this pressure is on financial resources, for in the long run sufficient financial resources can overcome many problems of educational policy. However, in the short run, two additional policy problems which are in fact " resource " problems must be considered: buildings and teachers.

a) *Buildings:* a programme of school building requires economic resources, a building industry, and raw materials. Material supplies and manpower resources take time to build up. Apart from the question of funds, any limitation in technical capacity or building resources may hinder the implementation of educational policy.

b) *Teachers:* similarly it takes time to train teachers, to increase the number of young people who opt for teacher training, or who become teachers after graduation. An increase in the volume of economic resources may improve the relative attractiveness of teaching (pay and conditions of work) so that this, too, is partly a problem of financial resources. Teacher supply, like school building, must be considered as part of the problem of educational resources.

Restraints on educational development due to lack of resources may force educationalists to reconsider their priorities for educational reform; this requires the regular reconsideration of educational objectives, and of the means and ways of achieving them. This continuous interaction between resource and other implementation questions and the reconsideration of priorities and objectives, is an essential element in educational policy and planning. The extent to which the various objectives (socio-political, economic, pedagogical) are consistent with each other is very important here. If resources, whether money, material or human—were unlimited, the relative importance of various reforms would not matter. As they are limited, however, the educational policy-maker has to decide upon priorities.

Other factors affecting objectives and priorities include consideration of whether both able and less able children can be effectively educated in the same classroom, and whether the needs of the below-average 16-17 year olds are better met at work or in school. In the final combination of social, cultural, economic and political factors which determine the sort of education a country adopts, there are equally important factors necessitating a constant dialogue between implementation, the formulation of objectives, and priorities.

Unfortunately, the resource implications of the expansion in secondary enrolments cannot be considered in relation to secondary education alone. Frequently, no separate estimates are published of educational costs and/or teacher requirements by sector and level of education; and educational expenditure decisions are often made in the light of the total expenditure rather than of constituent parts. Examples of growth in secondary school requirements will therefore also be related to total expenditures. This approach is also justified by the variety of educational systems which makes a standard definition of secondary education impossible. The enrolment data for secondary education (see Chapter I) are to some extent comparable, however, as they have been re-arranged to eliminate the most obvious inconsistencies as between national definitions of secondary education. Total resource data are therefore often more significant for comparative purposes than data by level of education.

I. RESOURCE IMPLICATIONS OF QUANTITATIVE AND QUALITATIVE CHANGE

a) FINANCIAL RESOURCES FOR EDUCATION

Expressed in monetary terms, the increase in educational expenditure in many OECD Member countries over the past 10-15 years is very impressive. In Sweden, for example, public expenditure on education increased from Kr. 1,017 million in 1950/51 to Kr. 4,162 million in 1962/63, or from 3.5 per cent of gross national product to 5.7 per cent. In terms of total government expenditure the increase is from 22 per cent to nearly 26 per cent of the annual budget. Sweden might be exceptional, however, for it is one of the wealthiest European countries; it has a fast rate of economic growth, has rapidly increased school enrolment, and has introduced reforms in both primary and secondary education. Nevertheless, its actual and projected increases in education expenditure are by no mean atypical.

The OECD Irish report[1] provides a strikingly similar example: in 1961/62 total expenditure on education was just over £ 29 million, by 1970/71 it is expected to increase to nearly £ 51 million. In the United Kingdom, expenditure has gone up from £ 560 million to £ 1.579 million in the 10-year period from 1954-1965, and in the National Plan it is expected to increase by one-third between 1964/65 and 1969/70. The report prepared by the Netherlands on educational planning[2] indicates that, between 1960-1975, current expenditure on education may increase from G. 1,425 to G. 5,600. Even more striking is the anticipated increase between 1950 and 1975 in total government expenditure on education. In

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[1] *Investment in Education: Ireland,* OECD, 1966.

[2] *Educational Policy and Planning, Netherlands,* OECD, 1967.

1950 this was G. 555 million and, in view of existing trends and plans, an increase to G. 7,000 million was planned by 1975.[1] France provides a similar example: total educational expenditure increased from Fr. 2,209 million in 1952 (or 7.2 per cent of the budget) to 15.693 million (or 17 per cent of the budget), and the Vth Plan anticipates further increases (capital expenditure doubling from Fr. 3,000 million per year to 6,000 million). Between 1955 and 1965 educational expenditure in Germany nearly doubled (from DM. 5.8 million to 10.1 million).

The percentage of GNP spent on education has increased in nearly all OECD Member countries. Table 73 shows that, between 1950 and 1965 (or latest year available), and in an even shorter span of time in some countries, this has doubled, or nearly doubled, in 11 of the 22 countries for which data over any period are available. In two more countries the increase was about 50 per cent (Austria, Sweden) in 10 years. In the others, except Spain and Japan, the increases vary from about 10 to 30 per cent, over varying periods of time. Data are not available for several countries for the full period 1950 to 1965, and the real increase rates over this period in the OECD area as a whole are probably considerably higher than they appear from this table.

TABLE 73. TOTAL AND PUBLIC EDUCATIONAL EXPENDITURE AS A PERCENTAGE OF GNP IN OECD COUNTRIES, 1950-1965

COUNTRIES	1950		1955		1960		1965	
	TOTAL	PUBLIC	TOTAL	PUBLIC	TOTAL	PUBLIC	TOTAL	PUBLIC
Austria		—		2.4[1]		2.88		3.44[2]
Belgium		2.53		2.94		4.54		—
Canada	2.58	—	2.98	2.59	4.47	3.92	—	—
Denmark		2.66*		3.0		3.8		5.3
Finland		2.58*		—		5.31*		—
France	—	—	2.85	2.32	3.41	3.01	—	—
Germany	2.54	2.47	—	2.73	2.95	2.86	—	—
Greece	—	—	1.9	1.5	2.1	1.7	—	—
Ireland	—	2.57*	—	2.84*	4.1[3]	3.14*	—	—
Italy	2.63	—	3.26	2.81	4.46	3.99	—	5.32
Japan		4.09		4.36		4.14		—
Luxembourg		1.53*				2.81*		2.85[4]*
Netherlands		2.64		3.56		4.68		5.51
Norway		2.69*		3.23*		4.16*		5.38[2]*
Portugal	—	1.35*	—	1.58*	2.3	1.92*	—	1.65[4]*
Spain		—		—		1.28*		1.28[2]*
Sweden		3.53		4.37		5.01		—
Switzerland		—		2.34[5]*		2.87*		—
Turkey		2.2		2.3		2.6		5.0[e]
United Kingdom	—	—	3.23	2.92	4.07	3.70	—	—
United States	3.39	2.70	4.13	3.34	5.27	4.16	6.47	5.07
Yugoslavia	—		2.6[1]		4.3[3]		4.8[2]	

NOTE. For some countries expenditure or GNP for the specific year was not obtainable and the nearest year was taken: (1) 1956; (2) 1964; (3) 1961; (4) 1963; (5) 1954.

* Expenditure data taken from UNESCO *Statistical Yearbook* 1965, and GNP data from the *Annuaire Statististique de la France*, 1966, (International Section). (Table *Comptabilités nationales*).

e. Estimates.

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[1] Expenditure foreseen for 1969 has, however, already reached this figure. The forecast for 1975 has probably been far too low.

There is little relationship between the countries' initial rate of expenditure and the increase in this rate in the recent past. The United States, with one of the highest rates in 1950, was still at the top in 1965. Several Mediterranean countries with exceptionally low rates (Portugal, probably Spain, Greece)[1] remained low in 1965 (or latest year); whereas the three others (Italy, Turkey and Yugoslavia), made a great effort and reached the highest category.

Though the figures here cover varying periods, and there are differences in definition and coverage of "educational expenditure" and in sources—a certain "model" percentage of GNP spent on education may be emerging in the developed countries. Many have attained the 5 per cent level, with the United States and Finland and Sweden. Japan probably has been consistently high since 1950.

Surprisingly, countries with very different educational systems and policies, and different levels of economic growth and development, allocate a very similar percentage of national product to education; the rate of increase has also been very similar over the past 10 to 15 years. Whatever the country's economic and educational policies, educational needs remain in the same order of magnitude, but apparently without a ceiling, for the proportion of GNP spent on education now exceeds 7 per cent in several countries.

The increase in expenditure expressed as a percentage of GNP is lower than that expressed in real money terms, due to inflation and economic growth. Expenditure as a percentage of GNP is therefore the more significant.

The increase in costs per pupil-place is one of the reasons for the growth in educational expenditure. Table 74 gives the current costs for England and Wales (i.e. does *not* include capital expenditure) per pupil for teachers' salaries, other staff salaries, books and other types of educational equipment. The calculation is in *money* terms and, therefore, makes no allowance for inflation, etc...

Table 74. ENGLAND AND WALES: COST PER PUPIL
In Pounds Sterling

YEAR	TEACHERS' SALARIES		STAFF'S SALARIES		EQUIPMENT		BOOKS	
	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONMARY	PRIMARY	SECONDARY
1952-53	18.31	32.88	0.41	0.70	0.46	0.13	0.30	0.69
1963-64	43.08	70.30	4.86	7.65	0.91	2.1	0.85	1.83

Source: Education Statistics, Institute of Municipal Treasurers, published annually.

Cost per pupil of teachers' salaries has doubled, that of other staff has increased tenfold; expenditure on equipment almost doubled while that on books nearly trebled. The National Plan envisages a further increase of one-third for expenditure on education by the end of the decade.

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[1] But Portugal and Spain would probably rank higher in 1963 if private expenditure were included.

Table 75 gives present and estimated future expenditure on education for a limited number of countries. In most, including 3 of the 4 developed countries, expenditure is expected to double (if needs are met); in most Mediterranean countries it will even treble (Italy, Spain, Greece, Portugal). Higher expenditure is due mainly to the increase in the number of pupils, although this is not true for all, since in Greece total enrolments will not be much higher in 1975, or in Ireland (1970) than they were in the early 1960's. The numerical increase will be more important in Austria, Portugal and Italy, a very important factor in the increase in expenditure in Turkey.

TABLE 75. EDUCATIONAL EXPENDITURE, PRESENT AND FORECASTS, IN SELECTED OECD COUNTRIES

COUNTRIES	TYPE OF EXPENDITURE	YEAR		SOURCE
Austria		*1963*	*1975*	EIP Report
Millions O.Sh	Total public	5,710.1	15,506.9	
Greece		*1961*	*1974*	MRP Report
Millions Drachmas	Total public current	1,568.2	5,500	
Netherlands		*1965*	*1975*	EIP Report
Millions H.Fl.	Recurring	2,790	5,600	
Italy		*1963/64*	*1974/75*	MRP Report
Billions Lire	Total	992	2,795	
Spain		*1967*	*1975*	MRP Report
Millions Pesetas	Total current	30,159	61,064	
Sweden		*1965/66*	*1969/70*	EIP Report
Millions Sw.Kr.	Total State	2,480.2	2,863.6	
Portugal		*1965*	*1975*	MRP Report
Millions Escudos	Total	2,355	6,440	
			Annual Average	
Turkey		*1965*	*1973/77*	MRP Report
TL 000's	Current	2,332.7	5,771.4	
Yugoslavia		*1965*	*1970*	MRP Report
Billions Dinar	Total	284.5	614.0	
Ireland		*1961/62*	*1970/71*	EIP Report
£ 000	Total	29,472	50,725	

The annual percentage increase in total educational expenditure from the early sixties to the mid 1970's is 8.7 for Turkey, 10.6 for Greece, 11.4 for Portugal, 12.6 for Spain, and 12.8 for Yugoslavia. Greece and Turkey anticipate spending roughly 350 per cent more on education in 1974 than in 1961, Yugoslavia 480 per cent, and Spain 470 per cent. Except for Greece, these countries expect between a fifth and a quarter of all public expenditure to go to education by the mid-seventies. All six countries envisage at least the trebling of educational expenditure at constant prices.

These are global estimates, covering all types of primary and secondary education, whereas this report is concerned with the resource implications of secondary school changes. Although it is not always possible to isolate the effect of secondary school changes on the overall increase in educational expenditure, this is not too serious, for at present all types of educational expenditure are increasing, and decisions concerning resource allocation and limitation are made both globally and for educational sectors.

Educational change implies rising costs both in monetary and real terms, and as a proportion of national income and of public expenditure. There are many reasons for this. The greatest increase in enrolments will be in the more expensive sectors of education (secondary and higher, rather than primary) as shown in Table 76.

TABLE 76. ANNUAL COMPOUND RATES OF CHANGES IN ENROLMENTS 1961 TO 1974/75

	GREECE	ITALY	PORTUGAL	SPAIN	TURKEY	YUGOSLAVIA
Primary	0.0	0.3	0.7	1.0	7.0	1.3
Secondary	2.9	5.3	9.5	8.5	6.9	7.6
Higher	3.8	0.3	4.9	7.0	10.1	8.4

Source: Mediterranean Regional Project Reports.

In general, both higher and secondary enrolments will increase at a faster rate than primary, thus implying a considerable increase in educational expenditure: in Spain, for example, a place in higher education costs eight times as much as one in primary school, in Greece five times, and in Italy three times. Yugoslavia (see Table 77) not only has large expenditure differentials according to educational type, but also the greatest percentage and cost increases in the most expensive types of education. Since the pupil-teacher ratio is smaller the higher the level of education (in 1960 it was 33:1 in primary school and 16:1 in the *gymnasium*), and salaries in higher education are higher, the implications of the data in Table 77 are even greater than is apparent at first sight.

Although the differential between primary and secondary costs will become smaller (one reason is that " primary " schooling continues until age 15), the latter will still be higher. The Yugoslav report on develop-

Table 77. YUGOSLAVIA: CURRENT EXPENDITURE PER PUPIL WITHOUT TEACHERS' PAY, IN DINARS

	1962	1975
Primary	3,177	10,960
Gymnasia	7,396	12,310
Technical schools	21,462	51,710
Teacher training	14,391	44,120
School for skilled workers	16,387	39,480
Other	42,536	7,082
Higher education	68,758	165,600

Source: MRP Reports.

ments in education between 1966 and 1970[1] estimates the annual increase in educational expenditure to be 10.8 per cent for primary schools, and 19.2 per cent for secondary. Except in Turkey, the expansion in technical secondary will be greater than that in general secondary education during the next ten years in the MRP countries.

Although the trends illustrated by these figures are common to all educational systems, cost differentials vary enormously. In Sweden, for example, the estimated cost per pupil in the compulsory school was nearly as much as in the *gymnasium*. Total expenditure per pupil is Kr. 3,160 per year in the compulsory school, Kr. 3,300 in state *gymnasia* and Kr. 4,100 in municipal *gymnasia*. This is partly explained by the fact that, as in Yugoslavia, the " primary " school takes all pupils until mid-adolescence, and therefore provides a type and level of education normally associated with those of secondary schools. The recent re-organisation of upper secondary schooling in Sweden has altered these figures, and current estimates are that in 1967/68 the cost per pupil-place in a comprehensive school will be Kr. 4,000, and in a *gymnasium-fackskola* around Kr. 7,000 per annum. Even though cost diffentials vary widely as between countries it is certainly the more expensive forms of education that have, and will, increase most.

The eight countries listed in Table 78 all show higher costs per pupil for general secondary than for primary schooling. In Austria, Germany, the Netherlands and Spain the costs per pupil in a general secondary school are roughly twice as much as in a primary school; in France, Italy and Japan the cost differential is lower but still considerable.

In Norway, in 1965, the current costs per annum per pupil were Kr. 1,660 and Kr. 2,130 for the 7th grade. The lengthening of compulsory schooling and the increase in voluntary enrolments will mean that more young people continue in the 7th-9th grades in the new 9-year schools, vocational schools and *gymnasia*. These three types of education cost twice as much per pupil-place as do the first six years of compulsory schooling and, as these are the levels most likely to expand, costs must increase.

Within upper secondary education, and especially in the economically advanced countries, those types of education which are expanding fastest may be the least expensive. Certainly, in Norway it is the general academic type which is expanding fastest and which is cheaper than the various

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[1] " The Development of Education in Yugoslavia in the period 1966-1970...", OECD, (mimeographed), 1966.

TABLE 78. COST PER PUPIL BY LEVEL OF EDUCATION EXPRESSED IN NATIONAL CURRENCY UNITS IN 1962

	PRIMARY	GENERAL SECONDARY
Austria	6,460	12,830
France	937	1,186
Germany	632	1,546
Italy	124,963	208,060
Japan	24,143	28,360
Netherlands	395	806
Portugal	554	2,998
Spain	1,372	2,827

technological, vocational and scientific types. The same is true of England and Wales, where, in Sixth Forms, arts and social sciences are increasing far faster than natural and physical sciences. The expensive laboratories required for the latter make their current and capital costs per pupil higher than those for arts and social studies. If these countries are typical of OECD countries, then the level (e.g. upper secondary and therefore expensive) and the type (e.g. humanities and therefore relatively cheap) must both be distinguished.

In the six Mediterranean countries much of the anticipated increase in educational expenditure is due neither to increased enrolments nor to the relatively fast growth of the most expensive forms of education, but to the rise in costs per year, of which the largest single factor is the increase in pupil costs in primary schools. This may seem to contradict what was said above, but is easily explained. Up to now, primary education was the cheapest (i.e. teachers' salaries were relatively low and pupil-teacher ratios high) but quantitative reforms are now changing this. As enrolment rates approach 100 per cent in primary schools, any increase in cost per pupil affects not a small minority but almost the whole age-group. A percentage breakdown of increased costs by type of school is given in Table 79.

For countries where enrolment in primary schools is already almost 100 per cent, and where there is little difference between primary and secondary school costs per pupil, percentages for primary schools are prob-

TABLE 79. PERCENTAGE BREAKDOWN OF INCREASE IN EDUCATIONAL EXPENDITURE IN MRP COUNTRIES BY LEVEL OF EDUCATION

	GREECE	ITALY	PORTUGAL	SPAIN	TURKEY	YUGOSLAVIA
Primary	39	21	45	31	31	38
Secondary	50	71	45	59	44	38
Higher	11	8	10	10	25	24
Total	100	100	100	100	100	100

Source: OECD Documentation.

ably lower than those for MRP countries. Within this area, variations exist in the length of primary schooling (8 years in Yugoslavia, 4 in Portugal), and in the degree of participation (100 per cent in Greece and Italy, but much less in Portugal and Turkey). The relative shares of the different levels of education will therefore differ considerably and, even where the proportions are broadly the same, the reasons for growth may differ. In these countries primary schools absorb 30-40 per cent of the increased costs mainly as a result of qualitative improvements.

The proportion of the overall increase which is due to pay increases for teachers differs according to type of education. Table 80 gives the percentage of the total increase for each type represented by teachers' pay.

TABLE 80. PERCENTAGE REPRESENTING TEACHERS' PAY IN TOTAL EXPENDITURE INCREASE

	GREECE 1961-1974	ITALY 1960-1974	PORTUGAL 1960-1975	SPAIN 1961-1975	TURKEY	YUGOSLAVIA 1962-1975
Primary	74	85	73	80	n.d.	63
Secondary	71	70	60	49	n.d.	44
Higher	31	44	43	70	n.d.	44

Source: OECD Documentation.

In all the countries where the necessary statistics are available, the increase in teachers' pay is proportionally larger in primary than in other types of education. In secondary and higher education the increase in enrolment rates is therefore a more significant element in the growth in costs than in primary education, although teachers' pay is still the most important factor in current costs. For example, in Spain, increased enrolments represent 5 per cent of the increase in primary costs, 38 per cent of that in secondary and 28 per cent of that in higher. The magnitude differs from country to country, but a similar difference is consistently found. The importance of teachers' salaries in the cost of education at any one point in time, and in the increasing cost over time, is common to all Member countries. In England and Wales, the National Plan[1] estimated that, in 1964/65, out of current expenditure of £ 611 million, £ 407 million was for teachers' salaries (or two-thirds) and, of the projected increase in expenditure of nearly £ 145 million, £ 74 million (or half) was for teachers' salaries. Teachers' pay represents an important part of overall education costs in all Member countries. In Japan, for example, in 1964, teachers' salaries represented over 70 per cent of total current expenditure for primary and secondary schools, roughly the same as in England and Wales. The question of training and retraining teachers is also linked to that of the cost of teachers' pay. Innovations to reduce the need for teachers (teaching machines, educational television, etc...) are obviously important here.

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[1] The National Plan, Cmnd. 2764.

b) TEACHER RECRUITMENT AS A RESOURCE FACTOR

The cost of teachers is only part of the problem, for they also have to be recruited. The Mediterranean Regional Project reports contain estimates of teacher requirements for the six countries between 1960 and 1975. Table 81 gives summary results of these findings.

TABLE 81. PROJECTED INCREASE IN TEACHERS

In thousands.

COUNTRIES	1961	1975	PER CENT INCREASE
Greece	34.5	49.2 (1974)	42.8
Italy	366.0	584.3	59.6
Portugal	37.4	72.2	93.0
Spain	118.8	212.3	78.7
Turkey	69.8 (1960)	233.6	239.8
Yugoslavia	104.9 (1960)	242.4	131.1

All the Mediterranean countries expect to increase the number of their teachers, but the size of the projected increases varies considerably. For Greece, the increase is to be little more than 40 per cent, whereas Turkey hopes the number of her teachers will be more than trebled. Between these two extremes come the other four countries. A study of the relative importance of primary and secondary school requirements shows that, in Greece, the number of primary school teachers should increase at the rate of 2.0 per cent per annum, and that of secondary school teachers at twice this rate. In Yugoslavia, the number of primary school teachers must expand from nearly 80 thousand to over 143 thousand, and that of secondary school teachers from 25 thousand to nearly 100 thousand. Again, this pattern is not uniform: in Portugal and Turkey the rate of expansion are much the same for primary and secondary levels. The increase is not confined to MRP countries: in 1972, France expects to need 156,350 secondary school teachers (first and second cycle), as compared with a stock of 83,479 in 1964/65, or an increase of 87.3 per cent. These examples suggest that the difficulty is not so much one of whether the resources are available to pay the teachers but whether sufficient numbers can be attracted to teaching, and can be trained and retained in the system.

Obviously there is not one problem here but a series. The doubling or trebling of the teaching force in a short period (10-15 years) requires an even greater expansion of the institutions which train teachers and, even when such an expansion is possible, young people have to be attracted to them. This must be done at two levels: one covering teachers for primary and the lower levels of secondary education (the Colleges of Education in Great Britain, the training centres for teachers at the *Collèges d'enseignement général* in France, the *Pädagogische Hochschule* in Germany), and one covering graduates from the universities to staff the upper levels of secondary education.

Teacher training courses are shorter than university courses (2-3 years maximum) and entrance requirements are lower (frequently, completion of the lower level of secondary schooling, the " real " examination, first part of the old *baccalauréat* or " ordinary level " being sufficient). As teaching in primary schools is mainly a female occupation (for example, in Italy, three out of four primary school teachers are women, and in France two out of three), the main problem is not to attract and train teachers but to keep them in service; the higher marriage rate and lower marrying age mean that the rate of trained women teachers leaving the profession is high. The Plowden Committee's Report[1] on primary schooling in England and Wales calculated that, for every 100 women who start training, only 47 are teaching three years after completing their training, and only 30 after six years. In fact, the National Advisory Council on the training and supply of these teachers[2] shows that, to increase the teaching force by between 12,000 to 13,000 requires the recruitment of nearly 40,000 additional teachers. To increase the number of primary school teachers by 91,000 between 1965 and 1974 in England and Wales means recruiting 262,000 additional teachers; the figures for secondary schools are much the same, an increase of 98,000 requires 266,000 recruits.

The academic upper secondary schools have a different problem: here a greater part of the labour force is male and largely graduate. The problem is therefore largely one of attracting university graduates into teaching in spite of competition both at home and abroad from industry, business, civil service, etc. This is more difficult in certain fields (mathematics and science in particular), where the range and financial attractiveness of other jobs may be greater than for graduates in the humanities. The Swedish planning report[3] considers that Sweden needs 30 per cent more teachers and that the shortage is " unevenly distributed among different types of schools, regions and subjects ". The retraining of existing teachers to deal with new subjects and types of pupils raises enormous difficulties.

In some ways, this is probably the most difficult problem facing countries which are attempting a structural reform of their educational system and/or curricula. New teaching methods, new subjects, and changes in the content of courses, mean that the existing labour force must be retrained. In particular, those teachers in whose subjects interest is declining (e.g. classical languages) in secondary schools must be retrained to teach different subjects (e.g. ancient history or other languages). The content of traditional subjects is also changing (e.g. " new maths "), and the methods of teaching have changed profoundly. Facilities must therefore be made available to instruct the teaching force in the new curricula and teaching methods. Some subjects (e.g. foreign languages) are now introduced earlier into the curriculum, or are offered to a wider section of the school population. In the recent past there has been a chronic shortage of teachers with these skills, and efforts must be made for existing teachers to acquire them. Finally, ways must be found to reduce the time required for innovations in methods and curricula to become part of educational practice. American experience shows that it takes 20 to 30 years for an educational innovation to become educational practice, so that, by

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1. Report of the Central Advisory Council for Education (the Plowden Report) *Children and their Primary Schools.*
2. See, for example, National Advisory Council on the Training and Supply of Teachers: *The Demand for and Supply of Teachers*, 1963-86, HMSO.
3. *Educational Policy and Planning: Sweden*, OECD, 1967.

the time it is accepted, it may well be outmoded. The process might be quickened by providing regular retraining schemes for teachers. In the United States and the United Kingdom, curriculum reforms appear to have been widely adopted more speedily recently than in the past. Innovations in science and mathematics teaching in the United States have been disseminated quickly, and the Nuffield programmes in science and primary school French have been adopted with considerable speed in the United Kingdom.[1]

Pressure is mounting to raise the status of primary and lower secondary school teachers, and hence to lengthen their training period. The difference between teachers trained in the university and those trained in other establishments will therefore narrow. In view of the relatively higher social status of the former, there is a danger that students may be increasingly attracted towards it and away from primary teacher training. Qualitative questions such as this in no way detract from the quantitative problems of teacher recruitment, however. Table 82 shows teacher requirements for the Netherlands. Requirements in all countries will increase, although in a varying amount.

TABLE 82. NETHERLANDS: ESTIMATE OF TEACHER REQUIREMENTS

	1960	1970	1975
Pre-Primary	11,800	15,000	19,000
Primary	43,600	56,000	60,000
Special Primary	3,900	6,000	6,800
Secondary Modern	9,100	12,000	—
Grammar	12,000	18,000	20,000
Junior Technical-Vocational	18,600	20,000	21,000

Source: Educational Policy and Planning: Netherlands, OECD, 1967.

In general, the number of teachers in primary and secondary schools must be increased by at least 50 per cent between 1960 and 1975 in view of the larger number of pupils and the need to reduce the pupil-teacher ratios. In France, an effort is being made to attract first-year students from the overcrowded university into shorter, teacher-training courses. In the United Kingdom, pressure on university places has resulted in many would-be university students going to Colleges of Education.[2] The danger here is that this procedure will be regarded as one for failures.

But where, as in Norway, in the next 20 years the numbers of teachers must increase from 47 thousand to 68 thousand and for upper secondary education must treble, ways must be found to recruit large numbers of teachers. Increases like these are by no means exceptional: in Austria the teaching force must increase from 28,905 to 37,600 if expected pupil num-

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1. See on this and related problems the report, *Curriculum Improvement and Educational Development*, OECD, 1967.
2. See, for example, The Universities Central Council on Admission, *Statistical Supplement* published annually.
Also: *Statistics of Education*, Part 3, published annually.

bers between 1965/75 are to be adequately educated. In the United States a 50 per cent increase in secondary school teachers is expected, and Germany expects similar increases in both primary and secondary grammar schools. (Between 1961 and 1970 the numbers of primary school teachers must increase from 145,500 to 228,800, *gymnasium* from 47,000 to 67,600, and various types of technical-vocational and trade from roughly 45,000 to 76,000). These figures illustrate the expected and/or necessary growth in the teaching force. There is no guarantee that sufficient teachers will be available but, in view of the recent pressure of young people to enter higher education in most Member countries, there is not likely to be any shortage of highly trained manpower.

c) SCHOOL BUILDING

In contrast to the many aspects of the teacher supply problem, that of accommodation is relatively straightforward, for it consists of providing sufficient space.

Chapter I showed for a number of OECD Member countries the size of the secondary enrolment increase expected in the next ten years, and Table 47 the relative rates of expansion for different levels of education. All these increases require additional school places, so that an intensive school-building programme is a necessary consequence. This generates two types of resource problems: money and buildings. The former has already been mentioned; our present problem is one of actually building sufficient school places. For example: the Spanish MRP Report anticipated an increase of nearly 2 million pupils in a 14-year period, or something like 145 thousand additional places a year. The initial technical difficulty is the modification of the construction industry (in terms of supplies of raw materials, labour force and capital equipment) to achieve such an increased rate of building.

An examination of the rate of school building in England and Wales in the late 1940's and 1950's shows that, in the second half of the 1950's, the rate of school building was higher than that now needed by Spain (an annual output of more than a quarter of a million places was averaged between 1955 and 1959), but this was in a highly industrialised economy with a sophisticated building industry. Furthermore, it took a four-year build-up of effort to achieve the same rate of building as will be required every year until 1975 in Spain. The financial and human resources needed to achieve the necessary building rates in Spain are considerable, but are by no means exceptional, for, Portugal, Yugoslavia and Italy have similar overall rates of increase in enrolments, and that for Turkey is even higher, for, pupil numbers are expected to treble between 1961 and 1975.

Although school place requirements are highest in the Mediterranean Member countries, other countries are also faced by the same problem. In Austria, for example, between 1961 and 1975, new places must be created for 40 per cent more pupils, in England and Wales for more than one-third, and in the United States and in the Netherlands for a quarter.

d) THE RELATIVE COSTS OF DIFFERENT EDUCATIONAL TARGETS

The problem of resources arises because the educational system has to respond simultaneously to a series of pressures, all of which call for heavy expenditure. In England and Wales, for example, between 1960 and 1975, educational policy has to meet the increase in pupil numbers due to the larger age-group, the extension of compulsory schooling and increased voluntary enrolment. Obsolete buildings have to be replaced and large classes eliminated. Each of these objectives requires more teachers and more buildings; and it is hoped to achieve them simultaneously. This series of objectives is widely accepted in Member countries. Table 83 which shows the cumulative impact on educational resources (teachers and buildings), as distinct from economic, gives a breakdown by objective of the number of teachers required. The demand due to the reducing of class size to 30 gives an exaggerated figure since this policy applies only to secondary schools, apart from certain primary schools in educational priority areas. For primary schools in other areas, classes of over 30 are considered acceptable.

Table 83. ENGLAND AND WALES: BREAKDOWN OF TEACHER REQUIREMENTS FROM 1960 TO 1975 BY POLICY OBJECTIVE

	INCREASE IN POPULATION AGED 3-19	INCREASE IN VOLUNTARY ENROLMENT	INCREASE IN COMPULSORY ENROLMENT	REDUCTON TO 30 PUPILS IN CLASS	TOTAL
Increase :					
in '000's	78	26	23	88	215
As % teaching force in 1960	+ 24 %	+ 8 %	+ 7 %	+ 27 %	+ 66 %

Source: W. Beckerman and Associates: *The British Economy in 1975*, pp. 458 et seq.

In the relatively short period of 15 years, the stock of teachers must be increased by 215,000 or 66 per cent; of these, 111,000 are for secondary schools where the projected increase in voluntary enrolments of the 15-18 age-group will require a 75 per cent increase in the number of teachers, or 15,000 a year. This imposes a terrific strain on training facilities: only 17,000 students entered training college in 1962/63; this was increased to 28,000 in 1964/65 and, if replacement and growth needs are to be met, must reach 40,000 by 1971, i.e. the number of admissions will more than double in a decade. The same is true for France: if the objectives for secondary education in the Vth French Plan are to be attained, then the average number each year from 1964 to 1972 of university graduates passing the *concours de recrutement* for teachers must be twice as great as it was in 1964/65.

The effect of these policy targets on building requirements is shown in Table 84.

These objectives, which should be achieved by the middle 1970's, require 6,319,000 new school places, or almost the equivalent of the stock of primary and secondary school places existing in 1960. Similar examples could be given for the Member countries. Whether such programmes are feasible, and what alternatives exist, can be decided only after a systematic assessment of the country's resources, and the possibility of mobilising

Table 84. ENGLAND AND WALES: BREAK DOWN OF BUILDING REQUIREMENTS BY POLICY OBJECTIVE

In thousands.

	INCREASE IN SCHOOL POPULATION	REDUCTION TO 30 PUPILS PER CLASS	REPLACE OR MODERNISE PRE-1900 SCHOOLS	REPLACE OR MODERNISE SCHOOLS BUILT 1900-1918	TOTAL
Primary	1,732	587	1,640	300	4,259
Secondary	1,021	222	517	300	2,060
Total	2,753	809	2,157	600	6,319

Source: W,Beckerman, *op. cit.*

them. If the least important objective (replacement of buildings built between 1900 and 1918) were eliminated, overall needs would be reduced by only 10 per cent. Roughly one-third (2 million out of over 6 million) are required at secondary school level.

e) The conflict between educational objectives and resources

Most of these examples show a state of actual or potential tension between the demand for educational facilities and the availability of resources (both financial and educational) to provide them. France, Germany, Scandinavia and the Netherlands are each trying to achieve several targets, many of them expensive, and it is questionable whether sufficient resources will be available to satisfy them all. In Sweden, for example, ceilings have been placed on the numbers going into secondary education. In the Netherlands, the school building programme is relatively easy to achieve, but the teacher shortage is a problem. In other countries the reverse may be true. Educational planning also has the difficult task of trying to ensure that training is available to meet overall economic and social demand, and that the different types of skills correspond to the country's needs.

II. THE IMPLEMENTATION OF EDUCATIONAL POLICY: PROBLEMS AND CONTROVERSIES

a) Imbalance between social and economic demand

In many countries the rapid expansion of secondary education enrolment has given rise to divergence between the social demand and the economy's need for certificated leavers from secondary education. Such divergencies are typical of the " growing pains " experienced in rapidly developing educational systems. In Austria, for example, a wide gap is foreseen in the near future between the number of people leaving higher education and secondary schools, and the labour market demand for their skills. Table 85 summarizes the information.

According to the yearly estimates for social and economic demand, between 1965 and 1974, the economic demand for university graduates will

TABLE 85. AUSTRIA: SUPPLY/DEMAND FOR TRAINED MANPOWER, ANNUAL AVERAGES[1]

	1965/69			1970/74		
	DEMAND	SUPPLY	DEFICIT	DEMAND	SUPPLY	DEFICIT
General Secondary	10,966	7,852	3,114	12,928	6,710	6,218
Secondary Technical	5,153	3,354	1,799	6,632	4,602	2,030
Teacher Training	2,400	1,548	852	2,820	2,260	560
University Graduates	25,019	17,629	7,390	28,804	19,213	9,591

1. *Educational Policy and Planning: Austria*, OECD, 1968.

be nearly 50 per cent greater than the supply of graduates. For the second half of the period, the demand for certificated leavers from general secondary education will be twice the supply, and for the 1965/69 period, for all types of upper secondary education the number of certificated leavers should be almost 50 per cent higher.

These projections are based on trend line extrapolations and a detailed analysis of economic changes, so that actual experience over the next ten years may counteract these fears. Educational policy could do much to reduce the gap by encouraging more youngsters to stay on at school and by providing additional educational facilities when possible.

Imbalance may also consist of an excess in the supply of skilled people over labour market demand. The problem here is not so much the total number being produced but the shortage of certain types of highly trained manpower and the excess of other types. In Sweden, the authorities are particularly concerned because the traditional appeal of the general *gymnasium* is so strong, thus giving rise to a relative scarcity of graduates from the commercial and technological schools. The proportion of " student " examination certificate holders who come from the general *gymnasium* has remained in the region of 80 per cent for the past 40 years. The 1966 Gymnasium Reform, combining the three existing types into one, was introduced to encourage young people to take technological and commercial subjects and to increase the participation of the more brilliant students.

In some countries there is the movement away from science towards other subjects, just at the time when scientific and technological disciplines should be developed. In Sweden the percentage of certificate holders from the *gymnasium* on the technological side fell each year between 1950 and 1957 and, although the percentage taking commercial subjects increased in the early 1950's, it fell each year after 1953. In the United Kingdom, the proportion of science subjects in all advanced level passes fell from 55 per cent to 51 per cent between 1959 and 1963, and this trend continues. Figures published by the Department of Education and Science show that, between 1963 and 1966, the number of Sixth-formers taking science increased by 10 per cent, whereas that taking other subjects increased by nearly 40 per cent. The Chairman of the Council for Scientific Policy considers that, if present trends continue, the proportion of Sixth-Formers taking science will fall from its present-day figure of 43 per cent to 23 per cent by 1970.[1] The biggest growth is at present in the social sciences, but is apparent only at university level since these subjects are not usually offered in upper secondary schools.

In Italy, some reform of secondary education may be required, for most of the certificated leavers (3 out of 4 in 1960) come from the classical *lycée*. Consequently, when these classical students enter higher education, 40 per cent transfer to scientific or technological subjects. By 1975, it is expected that 37 per cent of secondary pupils will be on the science side, but even this is hardly enough to counterbalance the present transfer rates. Such rates are possible only if secondary education is out of step both with pupils' aspirations and social and economic needs.

b) CONTROVERSY CONCERNING EDUCATIONAL POLICY

There is considerable controversy concerning the type of structural reforms which should be introduced. The wide variety of school systems in Member countries shows there is no consensus of opinion about what is the " best " educational structure. In Germany and in England and Wales, for example, the decentralised system of educational administration has produced a variety of forms of both comprehensive and parallel school structures within the same country. In England and Wales, the suggestion that each local authority should submit plans to organise its secondary schools along comprehensive lines was greeted with very varying degrees of enthusiasm, and some authorities have still not done so in spite of the wide range of choices presented by the Department of Education and Science. Those areas that followed the Minister's suggestions have had to deal with considerable local resistence; protest movements, pupil strikes, even legal action, have followed proposals to close, or the actual closing of, selective secondary schools. Those countries which have changed from the parallel system in lower secondary education have done so in spite of considerable hostility from sections of the teaching profession and of parents. The structural changes discussed in the previous chapter are thus seen to generate considerable tension, which educational policy has to deal with. Disagreement occurs at three levels: the *objectives* of an educational system (or any part of it); the *means of achieving* agreed objectives; and educational priorities when the economic situation requires choices to be made among a variety of education policies. Arguments are difficult to disentangle since the case for and against a particular change is carried on at all three levels simultaneously.

i) *Conflicting educational objectives*

The most nebulous of the arguments concern educational objectives, since an educational system may have a variety of objectives which are not necessarily consistent with each other, and some arguments may be based on a mixture of fact and judgment. Some consider that the change from a parallel to a comprehensive structure, whether at lower or upper secondary level, is likely to threaten either educational standards in general or those of the brightest pupils. An empirical test could be applied here but cannot effectively settle the question since, as the Swedish Report[1] points out, even if one type of school is shown to be superior to the other, other educational objectives may always be advanced, such as the " safeguarding and strengthening of the democratic system " or the " preservation of social tradition ". The volume and quality of the research into the relative value of the two types of educational systems are insufficient to provide the basis for an international consensus on this question. The difficulties of drawing clear-cut conclusions from cross-national comparative research are well illustrated by the recent International Project for the Evaluation of Educational Achievement (IEA).[2] The question of " standards " applies to various aspects:

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[1] See: ***Enquiry into the flow of Candidates in Science and Technology into Higher Education*** (Dainton Report), Council for Scientific Policy, Cmnd. 3541.

a) the performance of the " high ability ", " average ability " and " low ability " pupil;

b) the size and the performance of the " élite " in any subject;

c) the yield of the system, in the sense of how many pupils are brought how far;

d) the extent to which each system affects the achievement of equality of opportunity.

Some of these points may counterbalance each other. For example, the volume of " output " of a school system must be related to its quality, and at some point this may mean choosing between quality and quantity. To quote the report, " on some of these questions an ' unequivocal ' answer cannot be given ". Even the main conclusion: that selective systems show higher performance at age 13 but that, by the time pre-university age is reached, this no longer applies, is not conclusive in relation to many aspects of the systems. The report is concerned with mathematics only, whereas education includes all subjects. Research tends to be specific in form and design, whereas " education " is a complex, non-specific process.

This then is a complex area of empirical investigation, although studies in individual countries have done much to resolve the particular problems there. In Sweden, for example, a series of studies comparing pupils going to the 9-year comprehensive school with those attending the parallel stages in a selective (*realskole*) system were completed during the 1950's. It was found that the type of school the pupils attended had no bearing on their long-term achievement. In selective schools the level of the brighter pupils was higher for the younger children, but the differences levelled out as the children got older. Further, while the gifted pupil's performance was equally good in selective or non-selective systems, that of the less gifted improved in non-selective schools. Although these studies—which are consistent with both American research and, more recently, the IEA survey —were of some help to policy makers, as the Swedish report states: " hardly any of these studies could provide a very solid foundation for the policy maker ".

The concern about " standards " is common to all systems, which in turn suffer from the same lack of detailed and convincing studies on the effects of different types of school systems on a pupil's performance. Both educational administrators and policy makers are affected by the conflict about policy, while being genuinely uncertain about its outcome. But at least the Swedish studies point in a consistent policy direction without necessarily being overwhelmingly convincing. Yugoslav experience was more complicated: the reform of compulsory, comprehensive-type schooling, stated the Yugoslav authorities, was carried out at a time when " the percentage of pupils that successfully completes classes has been falling from year to year ".[1] The number of those repeating a class has increased at almost every level of both compulsory and upper secondary education.[2]

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[1] *Educational Policy and Planning: Sweden*, OECD, 1967.

[2] T. Husén (ed.): *International Study of Achievement in Mathematics*, Vol. I and II (especially Vol. I, pp. 64 et seq).

It is difficult, however, to determine the reasons for this deterioration in performance (repeaters and drop-outs). Not only was the Yugoslav system re-organised, but a successful attempt was made to ensure wider participation of the population in full-time education and to such effect that, in spite of continuing drop-outs and increasing repeaters, the number of certificated elementary school leavers increased from 156,147 to 225,788 between 1960/61 and 1963/64. In fact, for the 11-14 year old age-group the proportion enrolled in schools increased from two-thirds to three-quarters in this period. The deterioration in performance could therefore come as much from increased enrolments as from structural changes. The Yugoslav authorities themselves put the elementary school deterioration down to " overcrowding of classrooms, too heavy burdens on teachers, insufficient professional qualifications of teachers, inadequate school equipment and other weaknesses of the Yugoslav elementary school... ".[3] For upper secondary, in addition to overcrowding, " the lowering of standards in the higher forms of elementary school so that pupils come to secondary school insufficiently prepared to follow the teaching "[4] was given as a reason for the deterioration in performance.

The Yugoslav example brings out the difficulty of determining the effective influence on performance. In addition to changes in the structure of education, the increased numbers of pupils enrolled and the concommitant stretching of resources could just as easily account for the apparent deterioration in performance. In complex social systems several influences may explain the same phenomenon. Simultaneously a number of variables change and thus make it difficult to isolate cause and effect. A comparison between Swedish and Yugoslav experiences may not be proper: both are introducing the same type of educational reforms and for similar reasons, but the existing systems of primary and lower secondary differ. In Sweden, universal participation up to the minimum leaving age had been achieved; the system of primary schooling was well established. This is not true of Yugoslavia where the effective implementation of compulsory schooling is only now being achieved. The existing educational conditions were different, therefore, as might also be the short-run effects of structural reform.

ii) *Differences arising over education means*

Even when there is no fundamental difference concerning educational objectives, conflict may develop over the means of achieving them. General agreement now exists on several basic educational objectives: the economic and social desirability of the wider participation of the population in education at all levels; the undesirability of early and irreversible decisions concerning a person's educational and occupational future; the difficulty of measuring general ability and specific talents, especially in young children. Some authorities consider that such objectives as increased participation, education flexibility, and the postponement of test-selection can be achieved by continuing common schooling well into adolescence; in other words, the development of comprehensive school structures in the sense discussed above. Others argue that the same objectives can be achieved within a parallel school structure by introducing common curricula, developing extensive transfer possibilities between school types, and beginning new types of educational programmes, offering courses that prepare pupils for higher education. Examples of these in Germany and Austria were given earlier, but similar examples are found in parts of England and Wales, Denmark and, to a lesser extent, Switzerland. Those in favour of preserving the parallel system stress the need to continue well-established and proven educational methods, and to innovate and experiment in such a way that the traditional centres of high educational achievement are not in any way threatened. Here it is not the policy goals but the means of achieving them that are under discussion. Although empirical tests could be applied, investigations have either not yet been attempted, or are still too incomplete to aid policy makers.

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[1] See " The Development of Education in Yugoslavia...", OECD, 1966 (mimeographed), p. 59.

[2] See for more detailed data Chapter I of this report.

[3] *Op. cit.*, p. 59.

[4] *Op. cit.*, p. 67.

This report contends that such disagreement as exists, within societies and between them, mainly concerns the means of achieving educational objectives rather than the objectives themselves. The task of educational planners and policy makers is to pierce through the arguments and counter-arguments and devise a system which strikes a balance between them and is acceptable in the society within which it has to operate.

iii) *The question of educational priorities*

The establishing of an agreed set of educational priorities becomes necessary as a result of limited educational resources (financial, human and building), and a choice must be made from among possible educational reforms. Limited resources may entail a fall in standards if too ambitious a programme is attempted (as in Yugoslavia), i.e. an increase in numbers at the same time as changes in what is being taught and in the types of schools. Multiple reforms plus economic scarcity have therefore forced many educational planners to work out a set of priorities. The list of questions that must be considered include:

a) Is universal participation at primary school level of more or less importance than an increase in secondary school participation?

b) Are voluntary methods of stimulating an increase in enrolments more effective than compulsory?

c) Is it better to improve the pupil-teacher ratio or the quality of teachers (by lengthening their training)?

d) At what level should the highest proportion of educational resources be spent: primary, secondary or higher?

e) What is the better way of improving educational standards: full-time education or the encouragement of part-time participation?

f) Should the needs of the average and below-average pupil be considered more important than those of the able pupil?

Such questions as these would not arise in a system with virtually unlimited resources or in which prolonged education was the preserve of a small minority of the population. The fact that this minority is now growing at the same time as the size of the age-group is increasing, is forcing educational policy makers into making choices and establishing educational priorities. Educational policy in France illustrates this process: the Vth Plan explicitly lays down three objectives to which absolute priority is to be given: the maintenance of educational standards at a high qualitative and quantitative level; the absorption of increasing enrolments, and the implementation of a number of structural reforms designed to improve the system. In view of the investments required to attain these objectives, the Commission had to abandon a number of proposals for improving teaching conditions, i.e. reducing the number of oversize classes and replacing obsolete buildings. However, even this more limited programme would have meant exceeding the Government's ceiling on educational expenditure by Fr. 4,700 million, so that a further 20 per cent reduction will have to be made in the present five year's educational investment programme.[1]

c) TECHNICAL INNOVATION AS A SOLUTION TO RESOURCE PROBLEMS

An alternative to scaling down policies is to find ways of meeting the demand for additional places and teachers without actually building and training more. This type of policy is easier to illustrate for buildings than for teachers. For much of the day, and for long periods of the year (weekends, school holidays) buildings are not used or are under-used. By revising timetables it might be possible to use existing building equipment more intensively. Staggered school holidays, the development of a separate morning and afternoon school (at least for younger children), or the development of all-day schooling in such systems as that in Germany, might be ways of providing more school places without building more schools. At the same time, everything should be done to attract back to teaching those trained teachers who are either not working (married women) or who are employed in another field.

A reduction can be made in the size of large classes if the number of very small ones is reduced.[2] In Sweden a considerable effort is being made to eliminate small classes that are a consequence of small schools in rural areas, and also those in upper secondary education where a very few pupils take particular subjects. This saving can be achieved by using existing resources. In addition, the more extensive use of teaching aids (educational television, programmed learning, etc.) would to some extent replace teachers by machines. Similarly, more auxiliary labour could relieve teachers of some of the administrative and other time-consuming tasks in running a school. Finally, the whole range of questions: pupil-teacher ratios, what is desired, what is necessary, and what can be achieved, ought to be re-considered. The extent to which modifications may be necessary or possible will depend not only upon the individual country concerned, but also on local and regional needs, and on the particular exigencies of each subject in the curriculum. Often local differences in subjects are as important as national differences.

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[1] See *Vth Plan 1966-1970*. Rapport général de la Commission de l'Équipement scolaire, universitaire et sportif, Paris.

[2] In Chapter I of this report, attention was drawn to the inflation of the size of the lower grades in many school systems as a result of extensive grade-repetition practices. The upper grades have often excessively small numbers pf pupils.

Questions of school building and of teacher supply have been dealt with in special OECD reports.[1] The educational explosion and the increased demand it engenders are putting a heavy strain on both abvanced and developing countries. Table 86 shows the increase in certificated secondary school leavers in the ten years ended 1965/66. A similar increase is expected in the subsequent ten years.

In Sweden changing lower secondary education so that pupil differentiation does not take place until the age of 15 (the year before transfer to the *gymnasium*) has resulted in virtually all pupils (8 or 9 out of 10) opting for courses that give access to the *gymnasium*. As a result, in 1966 there were nearly 45,000 applicants for 35,000 places in the *gymnasium* ; further, the *fackskola* was also oversubscribed, having over 16,000 applicants for 11,000 places. The Swedish authorities have therefore placed a ceiling upon the number of places available in the various types of upper secondary education. This was done for several reasons: partly because the labour market requires 16 year old entrants, partly to ensure that a reasonable proportion of the age-group takes courses other than the academic *gymnasium* courses, and finally because neither present financial nor educational resources can meet the level of demand implied by these figures. But despite this, Swedish educational authorities anticipate that by the 1970's 85 per cent of the upper secondary age-group will be in school.

In the United Kingdom, the Robbins Report: (1961-1963) established certain principles that might be adopted for higher education and estimated the likely number of suitably qualified applicants. These have already been overtaken by events, and consequently the pressure on places in

TABLE 86. INCREASE IN THE NUMBER HAVING ACCESS TO HIGHER EDUCATION[1], 1955/56 TO 1965/66

	1955-56	1965-66
Austria	3,259	7,490
Belgium	10,142	25,010
France	40,146	105,839
Ireland	5,671	11,795 (1964)
Netherlands	8,618	17,183
Norway	4,617	12,357 (1964)
Sweden	6,553	17,183
Turkey	8,024	25,098
United States	1,414,800	2,700,000

1. These, data were already reported in Table 13, Chapter I.

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[1] See in particular Guy Oddie: *School Building Resources and their Effective Use*, OECD, 1966. A study on teacher supply and recruitment problems is at present being elaborated under the Programme of Work of the Committee for Scientific and Technical Personnel.

universities is greater than ever. Instead of 63 per cent of suitably qualified school leavers (i.e. with at least two " A " levels) going to university, which was the Robbins suggestion, 55 per cent gained admission in 1955. The reasons for this are that Robbins projected 64.3 thousand would qualify in 1964/65 whereas there were actually 73.2 thousand. The same is true for pupils getting 3 + " A " levels. Robbins projected 41.3 thousand and the actual number was 46.5 thousand. The increase is greater than projected and, although this was not entirely unexpected, university expansion, which has been in step with Robbins' recommendations, has been slower than the growth in demand. Most surprisingly, the wide gap between projection and experience made its appearance only three years after the projections were made.

The sophisticated use of advanced educational technology is considered to be a means of reducing the gap between available resources and anticipated demand. The expression " educational technology " covers a variety of ideas and images, many of which are more hopes for future development than currently demonstrated ideas. Two different types of application should be considered:

i) *Mechanical aids in educational administration*

The task of administering an educational system or an individual school is becoming increasingly complex. With the growth in size of individual schools and the wide variety of subjects introduced into curricula, traditional techniques of timetabling are proving increasingly inadequate. Hence the growing use of computers to assist in drawing up both pupil and school timetables. Methods of record keeping, auditing and school maintenance which are appropriate for small schools using rudimentary equipment, are not suitable when expensive laboratory (science and language) equipment is concerned. Methods of examination which are suitable for a small minority are impossible when the numbers grow: hence discussion about mechanizing the examination system. Finally, the increasing cost of education means that new and different types of scrutiny must be introduced into educational budgets and planning. At national level this means refining forecasting techniques, improving information on the cost and effectiveness of different programmes; but such methods are also necessary at the local level of educational administration.

ii) *Mechanical aids as a complement to or a substitute for traditional methods of instruction*

Educational technology may also be applied to actual teaching, for example, closed circuit television, language laboratories, and computer assisted learning may be used to complement the traditional work of the teacher. This complementary use in no way changes the need for teachers, or reduces the overall demand for them. It is also possible (but not demonstrated) that some technical innovations may serve as substitutes for teachers or for other educational resources. Computer-assisted learning may permit the substitution of manpower by machine and therefore either reduce the demand for teachers or make more time available for other teaching activities. The scarcity of educational resources and the growing demands made upon them makes the whole question of teaching aids very urgent.

d) VOLUNTARY INTRODUCTION OF CHANGES

Disagreement concerning educational policy, whether on points within one system or on the choice between systems, does not arise only as a result of eking out scarce resources. For, educational values and objectives are by no means uniform. Some conflict therefore arises as a result of differences in judgment or opinion concerning educational policies and structures. The difficulty of getting policy implemented, in these circumstances, may be overcome by encouraging the " voluntary " approach to change. For example, in Sweden, discussion on the reorganising of primary and lower secondary education along comprehensive lines began in the 1940's. Public disagreement produced a situation in which the immediate application of a 9-year common schooling was impossible. An act was therefore passed to permit those authorities who so wished to introduce such a system and, throught the 1950's, an increasing number of localities did so. Official figures show that the proportion of the age-group attending these schools went from 3 per cent in 1952/53 to 10 per cent in 1955/56 and 80 per cent in 1964/65. In 1959, the act was changed and a start made to apply the 9-year common schooling throughout the country. This strategy of voluntary application had a number of advantages: time took much of the heat out of the arguments on the relative merits of the parallel and comprehensive systems. It enabled people (both lay and professional) to get used to the idea of comprehensive schooling for this age-group, and allowed them to obtain information (by experience and research) on the relative advantages and disadvantages of the two school types. Resource problems (new buildings, training and retraining teachers, etc.) were made less urgent as a result of the slower speed of introduction. A similar strategy was adopted by the Italian authorities who began introducing the *scuola media* on a pilot basis, and five years elapsed before it became national policy.

Such a policy has obvious advantages and might profitably be emulated by Yugoslavia when the proposed 15-17 common school programme is introduced. Any experimental programme provides useful experience which might subsequently be used as a pilot technique for educational innovation, provided assessment is possible. A thorough assessment of such innovations as this takes many years, however, and would probably be too slow and too limited in scope to provide unequivocal answers to the many questions raised concerning educational systems. Opinion and judgment are therefore likely to continue to influence all educational change: on such important questions as school re-organisation, research may help shape policy but can never determine it. Educational reform in the foreseeable future will be as much the result of political and social faith as of empirical investigation.

This does not mean that research and experimentation (and therefore voluntary implementation) have no place in policy making or no use as strategies for implementing policy: it does imply, however, that better information can never determine basic policy issues, that all it can do is to make policy debate better informed and perhaps more realistic. Inevitably, large-scale educational change will involve a step in the dark, and here previous national and international experience with similar changes will be a useful guide. Such experience can be gained by the voluntary introduction of change but this will only postpone the step into the dark and perhaps reduce its size.

e) IMPLICATIONS OF EXPANSION FOR THE " SCHOOL LEAVER "

The growth in pupil numbers, due to legislative changes, demographic factors, and the increase in voluntary enrolments is common to all Member countries. But this does not mean that prolonged secondary education has already become the prerogative of the majority of the population. Table 87 shows the proportion of the age group not in school for four Member countries.

TABLE 87. PER CENT OF AGE-GROUP NOT IN FULL-TIME SCHOOLING

	FRANCE 1964	UNITED KINGDOM 1965	SWEDEN 1963	UNITED STATES 1964
15 +	42	37	26	7
16 +	50	74	51	22
17 +	63	86	63	28
18 +	76	95	71	—

European countries are still far from achieving universal participation in upper secondary education. Some are making an effort towards it: for example, Sweden anticipates a 75 per cent enrolment for the 16-18 age-group in all types of education by 1970. But, unless part-time vocational and further education courses are included, even by the 1970's, only a minority of the population will still be attending school at 17 or 18. At present, half the 16 year olds have already left full-time schooling in Sweden and France, and three out of four in the United Kingdom. An industrialised society has considerable problems in finding suitable jobs for a large number of early leavers (such jobs are becoming more and more rare), and there is a risk of permanent unemployment. The problem raised by early leavers and school drop-outs should not be confused with that due to the limited general education of the majority of the population. The former type is most acute in the United States, in particular for certain ethnic minority groups. The Japanese authorities also are concerned that two million young people receive no formal education in mid and late adolescence, even though 70 per cent of the age-group attend upper secondary schools. The seriousness of the second type of problem—the low educational standard of the general population—is much more speculative: although it is possible to assess the educational level of the bulk of the population, its adequacy to meet the next 50 years of social and economic change can be only surmised.

The raising of the standard of education to the level required will be a very critical problem during the next decade; possible measures include stimulating voluntary enrolments and legislation to extend the period of compulsory schooling.

The effect of these measures is to put further strain on already scarce resources. Increased voluntary enrolments still leave untouched the needs of school drop-outs, and compulsory school attendance creates a percentage of " reluctant " pupils, who have no interest in education and who often do little but generate trouble in the classroom. The whole question of what should be taught, and how, to young people in middle and late adolescence needs to be carefully reconsidered.

This question was thoroughly examined at the time the compulsory schooling age in the United Kingdom was raised to 16. The " Crowther Report " on the education of adolescents from 15 to 18 explicitly recommended compulsory legislation to ensure prolonged education for all young people. The authors are less explicit concerning the ways in which the additional final year of schooling could most profitably be used for those with average or below-average intellectual ability. The United States are tackling the problem through their " compensatory education " scheme, whereby the child is given the means to develop any talents he may have inside the school, and so compensate for the cultural shortcomings of his home life. It is thus hoped to curb the development of drop-outs and reluctant pupils. The problem is a very difficult one and, in spite of the considerable resources allocated to this scheme, the results are still far from being encouraging.

A further possibility is the more widespread use of part-time educational facilities. In many countries this means vocational training, and so would have a particular appeal for pupils who are not interested in academic or general secondary education. In Germany, Denmark and Austria there are more 17-18 year olds in part-time vocational and technical education than in full-time academic education. In Germany full-time education, which finishes at 15, is followed by 2-3 years of compulsory part-time vocational training, thus achieving almost 100 per cent participation of the 15 and 16 year olds. Under this " dual " system the greater part of the time is spent at work, and the rest in the classroom. The lessons supplement the on-the-job experience which in turn, gives practical meaning to the theoretical discussion in the schoolroom. A dual system of this type is perhaps the best way to meet the needs and interests of the youngster whose abilities are practical rather than theoretical, and whose occupational future is manual rather than non-manual.

In the years to come all countries will have to work out the structural relationship between vocational and other forms of education (general secondary-technical secondary). Within vocational training a satisfactory relationship must be found between its strictly vocational content (the acquisition of both the practical and theoretical content of specific skills) and the growing amount of more general education now being included. This implies that vocational education must not continue to be the poor relative of other types of secondary education, and that pupuils must be given opportunity of continuing their academic education after completing vocational training. For this, the general educational side of vocational training is essential, for without it transfer either to general secondary or to higher education would be almost impossible. A four-year senior high school has been set up in New York combining academic and vocational courses to enable pupils to transfer from one to another. The Swedish authorities are now considering how the *gymnasium, fackskola* and vocational education might be integrated to ensure the wider participation of the able children in the three types of education and a proper balance of intellectual, practical and general studies in the education of all young people.

Finally, continued education could be provided by extending adult education. This exists in both its vocational and gerenal forms in many countries. Rapid technological change makes the need for retraining adults increasingly necessary and, as the large majority of the adult population finished its full-time education at the age of 15 or 16, it still has much to learn. This is particularly important in view of the educational opportunities now offered to young people, giving them advantages which those a few years older have not had. Adult education is now made more urgent by the recent changes in secondary education.

CONCLUSION

I. THE NEW ROLE OF SECONDARY EDUCATION

Rapid expansion of enrolments, increasing educational investments and the growing awareness of the actual and potential role of education in modern society, have led to a reconsideration of the objectives of educational systems and of the nature of the training which they provide. No single Member country of the OECD pretends to have succeeded in defining satisfactorily the new role which education might play. Concepts that seemed promising only a few years ago have already been superseded, and some objectives of education which in less developed countries are still taken for granted are now being questioned in the more developed countries. Because of the pace of social, economic and political change and the ways in which science and technology change the environment, the gap between what is taught in the schools and what will be required by society from its members by the turn of the century, has widened. Traditional mechanisms and methods for updating the content and the methods of education are inadequate in the face of the problems raised by the rapid progress of the sciences and increase in the body of knowledge.

The efforts to adapt education to its role in society have in the past twenty years been most significant in secondary education. The extension of compulsory schooling beyond the elementary stage, allied with the baby-boom, have caused secondary enrolments to double and, in some cases, treble in a short span of time. The increase in pupil numbers combined with the growing economic need for middle-level trained manpower has induced countries to think of new educational programmes. These have been designed to receive the great numbers of new pupils whose social and educational background and aspirations are inconsistent with the approach and the value-systems of the traditional schools; at the same time these programmes would need to be more in tune with the needs of the labour market.

In all developed countries secondary education is moving beyond the stage at which, because of the limited demands from both higher education and the economy, it could afford to be selective. The changes that elementary education experienced earlier this century are now taking place in secondary education. In essence, secondary education for all has become part of the educational practice of most developed countries. The needs of this mass-clientele have, in particular, to be reconciled with the intellectually elitist requirements of higher education and with the labour market requirements for qualified manpower. Parallel with this there has been a growing awareness that the level and quality of secondary school participation is not uniform throughout the society. Inequalities persist and so educationalists must search for secondary school programmes that simultaneously meet the needs of growing numbers of pupils, stimulate more pupils to attend and, not least important, satisfy the basic demands to which secondary education has to respond—namely, provide a programme of general education to a constantly rising level, train middle-level manpower and prepare for higher education.

The difficulties which countries experience in developing a secondary education system which meets these requirements stem partly from the rapid evolution of modern society itself and multiplication of educational objectives. First there are the demands for education which society formulates in terms of its quantitative and qualitative needs for trained manpower. Second, there is the need for general education which all future citizens should receive in view of their role in the world of tomorrow. Finally, the structure and objectives of higher education for which secondary education should prepare exerts an influence. All of these forces shape secondary school programmes; all of them are in a continual process of change. Perhaps the crucial problem is the extent to which these influences are consistent in their secondary education implications. Currently the conflict of interest has focused on the discussion around the structure of secondary education and the timing and nature of the selection and streaming which is built into this structure. Many people fear that the educational implications of the objective of wider educational participation will be incompatible with meeting the needs of either higher education or the labour market.

The OECD countries are currently adopting different solutions to these problems. They seek to find a compromise between the need for common educational experience for all children (derived from the equality of opportunity objective) and the need for selection and streaming (derived from the manpower training and the higher education objectives). Whether such compromises are in fact inevitable or whether what now seem conflicting requirements may with future experience appear compatible, is a critical question confronting those concerned with the shaping of the educational systems of the future. One thing is virtually certain: these systems will continue to develop (under the various pressures and for the various reasons analysed in this report) in the direction of secondary education for all and will, therefore, increasingly provide the essential infrastructure to the achievement of political, social, cultural and economic objectives. It is against this wider context of overall policy motivation that strategic decisions affecting the development of secondary education must be consciously taken and evaluated.

II. EDUCATIONAL POLICY AND EDUCATIONAL OBJECTIVES

The policy implications of this report vary with the level or type of educational policy under discussion. At once a distinction must be drawn between decisions that are essentially " political " (involving fundamental discussions about the aims and objectives of education and the structural and curriculum means of achieving them) and those that are " technical " or " administrative " decisions (which seek to translate general policy into specific educational action). A further distinction can be made between policy and planning that is essentially " responsive " and a second and more " positive " type of policy approach. By the former is meant ways in which the educational system must be organised to meet events and situations which are partly outside its control, i.e. where educational policy and planning are responding to pressures or pre-determined situations. An obvious example of this is the provision of school places for changing numbers of youngsters of compulsory school age, and the provision of teachers, equipment and the like, for the existing school population. Another type of policy is more concerned to create the conditions themselves: changes in the structure of school systems, and the content of courses are examples of this more positive role for educational policy. The distinction between the two types is by no means clearcut: a positive policy of encouraging wider educational participation may generate a need within the system for additional facilities to meet the growing numbers. In the same way, radical reforms at one level or stage of education can mean responsive adjustments at other levels or stages. There is, therefore, an interplay between these two broad types of policy, and current educational policy changes are of both types. In the same way, " political " and " technical " decisions interact over time: both direct experience and research into current " technical " policy can bring about a re-evaluation of the " political " policy from which it originally stemmed.

With 22 Member countries considerable variation must exist in both the policy concerns and the educational programmes within the OECD area. But this variety should not be allowed to hide the common problems which lie behind policy decisions currently confronting the majority of Member countries. Within this context four specific educationnal objectives have been generally accepted:

a) achieving wider and more effective participation in education;

b) designing an education curriculum relevant to changing social, economic and political needs;

c) ensuring flexibility of both educational structure and content;

d) increasing the efficiency of the system.

These four general objectives by no means exhaust the policy concerns of individual countries, nor of the OECD area. What they represent are the general concerns of all, and the central concerns of most Member countries. Though each one of these areas can be justified on its own merits, it is the combined effect of all of them that adds up to the central concern of current educational policy, namely the *democratisation* of education, i.e. the achievement of full educational opportunity for all in the context of the role of secondary education discussed in the preceding section. There is a growing awareness that this cannot be achieved by mere formalistic measures to facilitate or enforce wider and more prolonged access to education but that such steps must be accompanied by parallel efforts to re-adjust curricula, to ensure structural flexibility and to reduce attribution rates within the system.

III. WIDER PARTICIPATION

All educational systems are facing increases in enrolments for both demographic reasons (changes in the size of the relevant age-groups) and increased voluntary enrolment beyond the age of compulsory schooling.

The timing, the magnitude and the relative importance of demographic and voluntary demand factors on these increases vary between systems, as do the level (primary, secondary, higher) and type (academic, general, vocational) of education that are expanding most. The policy implications of this expansion are considerable, not least important being the strain on educational resources.

At the moment one general policy problem stands out in the foregoing report: despite expansion in numbers of students especially in academic upper secondary education, profound inequalities (by class, sex and region) still persist in educational participation. Although progress has been made, the inequalities have persisted in certain systems despite explicit policy efforts either to narrow or eliminate them. All systems agree on the need (for economic, social and political reasons) to ensure both wider and more equal participation in certain levels and types of education, and all have as a policy objective more equal participation, but the best that most countries can claim is partial success in achieving such equalisation of participation. Even in systems with high rates of participation in upper secondary and higher education, such as those of the United States and Japan, marked class disparities persist, and especially in the United States, regional and ethnic differences in participation rates have recently been given considerable publicity. Further, systems that have recently reported dramatic increases in enrolments (France, Netherlands, Sweden, United Kingdom) and explicit educational policies to reduce disparaties, have found these disparities to be very tenacious. The central policy problem in this context is designing educational strategies (whether in terms of financial assistance, structural reforms or curriculum innovations) to achieve more equal educational participation. It can certainly be said that the results of current policies so far are disappointing, and so probably the most important lesson of recent educational experience has been the awareness that providing facilities for wider participation does not guarantee their effective utilisation. Additional policies have, therefore, to be developed which seek to encourage active participation in terms of both access and performance if more equal educational opportunity is to be achieved.

IV. RELEVANT EDUCATION

A second major area of educational policy concern is the relevance of what is being taught in the schools to the varied objectives (economic, social, and cultural) of education. These objectives have increasingly to be adjusted to rapid socio-economic change on the one hand and to the changing composition of the school population on the other, as well as to the evolution of knowledge in the various subjects, particularly the sciences.

Obviously the problems of curriculum innovation are not new, but certain influences have made them more pressing. Increasingly, educationalists and others have been made aware of the multiplicity of functions education plays in a society. The growing need for trained manpower (especially highly trained), and the increasing awareness of the part the educational system can play in training (either by ensuring high levels of general competence and/or by the transmission of specific skills) has raised the question of the relevance of what is being taught in our schools with a new intensity. Parallel with this, the speed of social and economic change has underlined the importance of questioning the relevance of what is taught to an individual between the ages 5-15 for a working community life that will last a further half century. In yet another way, many pupils leaving school in Member countries this academic year will still be working in the second decade of the 21st century and living until the third. In what ways is (and, more important, can) the school curriculum take such time perspective into account? Added to this question is the complicating factor that the speed of various types of change may well be accelerating. This point is of particular importance when a further influence is considered, namely what has been called the " knowledge explosion ". Given the changes that have taken place in what is known (and, perhaps equally important, in methods of desseminating it), both the school curriculum and teaching methods must be scrutinised closely with a view to assessing their relevance to changing social, economic and educational needs. This is an area in which policy is mainly still at the questioning stage.

V. FLEXIBILITY OF EDUCATIONAL SYSTEMS

A third common area of educational policy is the attempt to ensure greater flexibility in educational systems. As already indicated, this is closely related to the wider participation-democratisation issue. In part, it is also a reflection of the growing questioning of the effectiveness and relevance of existing educational practice, in particular, the suggestion that the system ought to be more responsive to change—not least, to important changes in educational technology. Certainly, one of the problems highlighted by recent educational experience is the slow rate of diffusion of new techniques and practices throughout the educational system. Secondary school structures have for the most part not been conceived in terms of allowing for continuous change in the curriculum and content. A critical policy problem is finding ways of speeding up these rates of diffusion of change and innovations, whether these are of content or methods of instruction. However, the type of educational flexibility of most immediate concern is that which relates to ensuring that pupils are not placed too soon in irreversible streams or lines. Most systems are concerned about the problems of guiding pupils to courses that suit the individual's capacities and interests. Here the question of age at which such guidance-selection takes place, and the type of information used to ensure arriving at an effective decision, are of considerable importance. On top of this there is the question of not merely postponing such decisions until as late as possible but preventing any decision becoming irreversible. Examples of ways in which options are left open are numerous, ranging from transfer possibilities between lines and school types, and special conversion courses to enable individuals to change from one type of course to another, to a wide range of adult educational facilities that keep, in principle, educational opportunity open throughout life. Again it is the general problem of devising an educational system in which decisions about transfer are taken in the light of the best available information (and in this context the development of special guidance-assessment years is the most obvious example), and where these decisions are not irreversible, that is common to all systems. Where systems differ is in the facilities that are available to enable pupils to change schools, courses and lines.

VI. EFFICIENCY OF THE SYSTEM

Expansion of pupil and student numbers has taken place simultaneously with qualitative changes in the system (the content of courses, structures of schools, teaching methods, etc.) and during a period when increasing critical attention is being paid to the function of education within society. Because of this, growing importance is being attached to questions of the *efficiency* of the system, including the problem of drop-outs.

It is worth noting that the efficiency of the system in relation to the various objectives of education raises questions that have always been asked about who (and therefore how many) shall be educated, by what methods, in what subjects, in what types of schools and what type of selection should be applied. Questions of numbers, contents, methods and school structure are in fact as old as education itself. What characterises the contemporary debate is not the questions, nor even the answers, but the method of arriving at answers. Although a moral, political or philosophical element is inevitable (and desirable) in educational policy making, the new dimension is the empirical one. Many of the questions touched upon in this report are in fact capable of empirical investigation and elucidation. It is the realisation of this fact, and the increasing emphasis on the need for systematic research as a means of informing policy, that is one of the most striking general characteristics of current educational debates. But in addition to this, three other considerations, common to most systems, are influential in changing the answers to these traditional questions, in secondary as well as other sectors of education:

a) scarcity of educational resources;
b) difficulty of achieving policy objectives;
c) ignorance about outcome of policy.

VII. SCARCITY OF EDUCATIONAL RESOURCES

Perhaps the most striking finding of this survey of secondary education changes is not the expansion and change that have taken place, but the magnitude of expansion and change that is either anticipated or thought desirable over the next 10-20 years. Both past expansion and future growth create the very real problem of how far quantitative change and qualitative improvement can be either afforded (i.e. is the money available) or achieved (i.e. can the educational resources, like schools and teachers, be mobilized). Merely raising the question is not enough: it is clear that in many countries the strain on financial resources of future expansion will not only be considerable but possibly unbearable. In turn, the need for both teachers and school places is such that certain levels of education may not be able to expand quickly enough to keep pace with demand. Because of this, three broad types of policy discussion will be of increasing importance:

a) *Alternative methods of educational finance.* The development of free, compulsory, centrally financed education has been one of the salient developments in European history over the past hundred years. This has developed from primary, through secondary to higher education. Clearly, education now takes up so much of the annual budget that it has established itself as a permanent feature in national politics. However, some types of future expansion may require new types of financing. The question, therefore, is posed: how far can future expansion and change only be achieved if new and different methods of finance are developed? In particular, what role has the consumer of educational resources (or his family) to play in financing education? Will the bulk of new finance come from the consumer as a taxpayer, or will new and different methods of finance be used (fees for pupils, repayable loans, vouchers) to provide increasing resources?

b) Because of scarcity of financial and other resources, increasing attention is being paid to *priorities*, within educational policy. It is easy to advocate expansion of numbers and qualitative improvement in all types and levels of education, but which reforms should come first? Should reform of secondary education take financial precedence over higher? Can a higher rate of return be achieved by improving primary rather than pre-school programmes? Is the disadvantaged child's claim on scarce educational resources more pressing than that of the more privileged? These are some examples of the types of educational priority questions that scarcity of resources may force upon policy makers.

c) " Scarcity " is having a further influence in policy debates: namely, encouraging planners to think in terms of *alternative ways* to the existing ones of achieving similar results. The simplest example of this is the potential role of " educational technology " in acting both as a substitute for traditional educational resources (especially manpower) and improving efficiency by enhancing the effectiveness of learning. Neithers of these points is proved, both are in fact questions requiring empirical examination. A more subtle example of the same type of problem is the possibility of devising new and different types of educational structures (new forms of higher or secondary education) that may be less costly in financial or human resources than traditional educational institutions. Finally, the relative attractiveness of different types of education (academic, general, technical, vocational) may have to be modified as a means of providing alternative channels of education to the traditional and perhaps over-popular and out-dated ones. These and other policy questions can all be subsumed under the general problem of trying to find alternative means af achieving educational objectives.

VIII. INTRINSIC DIFFICULTY OF ACHIEVING EDUCATIONAL OBJECTIVES

The first part of this paper suggested four general major issues for educational policy makers. It was stated that these were by no means new issues, but were currently of more widespread significance. Additional impetus to the growth of general interest in educational policy-making is given by the realisation that past policies designed to meet these objectives have had only partial success and in some cases near failure. Rates of attrition remain high, regional and class inequalities persist; calling for education flexibility and innovations is easier than achieving them, and an educational experience relevant to life is easier to plead for than to design. Although in certain countries considerable reduction has taken place in rates of attrition in academic secondary schooling (e.g. Austria, England and Wales), in others (Germany and the Netherlands) leaver rates have remained both constant and high during the past 15-20 years. American experience suggests that despite a volume of financial resources in excess of that available in Western Europe, plus far higher rates of educational participation than currently existing in European systems, the same types of disparities in participation exist. In other words, a considerable volume of resources and high rates of involvement, though they diminish, do not necessarily eliminate inequalities. Many systems have attempted to introduce a variety of devices to encourage pupil transfer between types of secondary schooling and conversion from one type of programme to another. What information exists does not suggest that such opportunities are freely or frequently used. The point of these examples is to suggest that many of the problems that concern educational policy makers may be difficult to resolve either quickly or effectively. Perhaps the best single example of this is the frequently repeated need for a school curriculum that meets the various types of requirements frequently demanded from the system. The abilities of pupils plus parental motivation, the needs of the economy, political structure and wider society, as well as financial constraints and the conservation of existing structures, have limited the effective design-implementation of such a consideration. Merely cataloguing the requirements highlights the problem: are they achievable, are these goals compatible and to what extent can they be achieved with existing resources? These are the common problems of policy makers and planners.

IX. IGNORANCE ABOUT BOTH MAGNITUDE OF PROBLEMS AND OUTCOME OF POLICY

Educational change is not merely an ambitious and complex undertaking; like all social policy, it frequently has to be attempted, not merely hurriedly and as a result of political compromise, but also on the basis of inadequate information. To put the point in extreme form: little is still known about many of the most basic questions in education, for example, what can be scientifically asserted about the teaching-learning situation. Certainly, we know little about the scientific basis behind the types of policy issues that are currently the main concern of policy makers and educational administrators. The relative effectiveness of parallel and comprehensive school structures in achieving both wider participation and high levels of scholastic performance is not known, nor are the cost-benefits of placing education resources in various types and levels of education. This list of unknown or partially known areas could be easily extended. What is clear and common ground is that the size in the gaps in our knowledge about the functioning of educational systems must be narrowed; what is less clear is how these gaps can be reduced, and just what role more and better information will have in decision making and administration. One thing is generally agreed, educational policy-making can never be reduced to a set of empirical questions and answers. Not only because in the foreseeable future information will remain inadequate and partial but, more important, philosophical and political considerations will, and must, play a part in policy-making. Really what is needed is a clarification of the potential role *research* can perform in educational policy making and administration and the mobilization of resources to enable it to be carried out.

X. THE ROLE OF RESEARCH AND DEVELOPMENT

The role research might play in educational policy-making must be defined in terms of the distinctions between various levels of educational policy made at the outset; its role in what was called " political " policy would be different from its role in spheres of " administrative " or " technical " decisions. Whereas in the former, matters of judgement and ideology as well as considerations outside the educational system will influence policy decisions, discussions about the latter are confined to the educational sector and in principle involve exclusively empirical considerations. At best, research can question and stimulate political discussion but never determine it. By contrast, much educational development work (in curriculum innovation, new teaching methods, etc.) urgently requires empirical evaluation in order that decisions about the effectiveness of the methods can be made. Unless research is built into such development work, effective and rational decisions about its usefulness are impossible.

It is not the purpose of this report to suggest priority areas for research, and mention has already been made of some of the limitations of the role of educational research; educational policies are not always (or even largely) matters of fact. Judgement, opinion, value and ideology will always influence certain aspects of policy. There are, further, more practical limitations on the immediate usefulness of research for policy makers. Research tends to be highly specific in its design and approach, its time perspective is long, and its tempo frequently slow. Policy-making tends to be general, immediate and urgent. To some extent, therefore, there are incompatible interests of the policy maker and the research worker. On top of this, in many areas (especially development work) the research requirements of policy makers and administration can far outstrip the supply of research workers. Therefore, research priorities must be established and a strategy of research devised so that the requirements of both policy maker and researcher are met. Parallel with this, a strategy of educational change is required so that at each stage, where relevant, programmes can be observed and evaluated so that educational policy (on all levels) is provided with the best available information. This strategy must take cognizance not only of information requirements but resource limitations of the system and the frequent disagreement or uncertainty both about the objectives of policy and the means of achieving them. A current example is the voluntary implementation approach to structural reforms of lower secondary education adopted in both Norway and Sweden which enable invaluable experience of a proposed innovation, plus empirical evaluation of it, to be gained while minimizing both resource restraints on the innovation and ideological disagreement about it. This, in a sense, provides a valuable combination of *research and development* work in the service of educational innovation.

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